The Dental Digest.

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Original Contributions.

WHAT WILL THE POLICY BE?

By Theodore Menges, D.D.S., Chicago.

That grave duties and graver responsibilities are now resting upon the shoulders of the National Association of Dental Faculties no observing man can doubt.

The dental school is a necessity. It is part and parcel of our profession. As is the college, so largely will the profession be. It is to our schools that we must look for much of the inspiration that will urge forward and upward those who follow us. It is in these institutions that the embryo dentist must lay well that foundation which will enable him in future years to build durably and handsomely.

Are the schools properly preparing their pupils for the exacting duties of the intelligent dentist? That they are giving excellent discipline in much of the mechanics necessary to successfully perform certain operations, cannot be doubted. That many students are graduated who are sorely lame in the mastery of many of the mechanical principles involved in ordinary dental operations, is equally true. That the schools as a whole are sadly lacking in producing graduates who are mentally equipped to successfully grapple with the conditions which confront them in every-day practice, no well informed college man will deny. That many students enter annually upon a college course in dentistry, who are wholly unfit to enter upon the study and mastery of any profession, is a self-evident fact.

If the foregoing propositions be true, then is it indeed time that an earnest reform be inaugurated. The time is not so far in the past when the demand for the services of the dentist was greater than the supply. This soon led to an enormous influx into the ranks of the profession. The examining boards were besieged by applicants for examination, with no other preparation than having

spent from six months to three years in the office of some practicing dentist, who had himself entered the profession through the same channel. Dental schools multiplied rapidly and each year matriculated increasing numbers. This condition has continued until the present day, and it is now difficult to find a town of eight hundred inhabitants without a resident practitioner.

The great demand for the increase in the number of dentists has been fully met. New locations free from competition by the recent graduate cannot be found. The new-comer must now enter a competitive field and match his skill with an older and more experienced practitioner already on the ground. This produces a vast change in conditions, and unless our colleges recognize this fact and meet it with vigor and intelligence, we must expect to see our profession and calling remain stationary and fail to join the general advance made in every other avenue of life.

It now becomes necessary that our dental schools be educational centers. They must do more than guide the student in some of the mechanical principles involved in dental operations and make a pretense at scientific attainments. A course extending over four years is a necessity. Properly equipped Chemical, Histological, Bacteriological and Physical laboratories must be installed. Thorough courses of instruction must be given in these departments. In the Chemical, Histological, Bacteriological, Physiological, Physical—in all of these laboratories a master must be employed, and students must be thoroughly and systematically taught and educated therein. They must be so taught in these fields that they can enter critically and scientifically upon the investigation of any condition requiring the aid of the test tube, the microscope or the balance. The Prosthetic Laboratory and Clinic Rooms must be under the constant supervision of able superintendents, assisted by competent demonstrators.

Well selected libraries and museums must be installed and students encouraged to make liberal use of them. Under such training and from such a course of instruction the graduate can enter the competitive field and succeed. He will be interested in the dental literature of the day, will contribute to our journals, discover new facts, and aid the profession to enter upon a loftier and better career.

Will the dental colleges meet these new requirements? There are already forty-eight recognized colleges having membership in

the National Association of Dental Faculties. It is needless to say that not more than one-third of this number could survive if required to take up thorough work and maintain a strictly educational institution. Six more schools are to be balloted upon for membership at the coming meeting in July at Old Point Comfort. We are informed that six or eight additional new schools will file applications for membership at the same meeting. Presumably good fellowship will prevail and all these new candidates for national honors will be admitted to membership.

If the new schools are prepared to give a proper training to the prospective students they should be gladly welcomed into the national organization, but if any or all of them are less able or more poorly equipped to give a thorough course of instruction than the best (which though the best are yet deficient) of those now in the Association, it would be rank folly to admit them to membership. There are far too many now of the lower grade schools and too few of the better class. Instead of increasing the number of recognized schools, an earnest and vigorous weeding-out process should be instituted. Those schools that find it impossible, from lack of funds and able teachers, to properly equip and man an educational institution should close their doors. The meagre equipment, facilities and teaching force offered students to acquire a knowledge of the art and science of dentistry in many of our now recognized schools makes one blush to realize that such excuses should be recognized by a great national organization.

The question naturally arises, do our better schools, for we must believe that we have worthy dental institutions in this country, really know how ineffective and absolutely inadequate many of our so-called recognized colleges are? If so, why should they consent to lend their aid and powerful influence to perpetuate such conditions? This is what they do by uniting their forces in one great national organization. A very meager advance has this great national organization made. True, it has made some, but not such as was expected.

The dental profession has in the past reposed great confidence in the Faculties' Association. It has granted to this organization, wholly voluntary and without legal authority, greater power than that possessed by any other voluntary organization on earth. Has this power been used wisely by this N. A. D. F.? The medical

school men, with not one-tenth the central organization and committed power possessed by the dental school men, have made by far greater and more substantial advancement. Their requirements for entrance are much higher than the requirements prescribed by the Faculties' Association. Their course now almost invariably covers a period of four years, the majority requiring eight months to each course. Yet we need more time to properly prepare a young man for the profession of dentistry than for the profession of medicine. These comparisons are made in sorrow, and in the earnest hope that our college men may awaken and arise to a realization of the situation and reclaim the confidence of the profession.

The question arises: School men, what will your policy be? Will you continue to permit mere makeshifts to retain membership in your national organization? Will you stand still, or will you advance? Will you continue your policy of backing up and recommending national recognition for schools prepared to offer simply meager mechanical discipline to students, with practically none of the great essentials necessary to impart sound scientific training? Will you continue to admit schools when they have simply come up to your lowest levels, instead of requiring all new comers to be equal to your best grade of schools? Will you continue a three years' course of instruction, when every educator among you who is worthy to be called an educator knows full well that a four years' course is necessary to prepare a student to intelligently manage an office practice? Will you continue to admit students mentally unfit to enter upon the study of any profession, which you do by requiring only one year of a high school course, when you all know that the degree of mental training received in completing a high school course of study is a necessity to enter successfully upon a proper course of dental study? Again we ask, what will your policy be?

Will the stronger schools not only protect but multiply the weaker ones? Remember there is about to be an accounting, not in the dim and distant future, but the day is practically at hand. The hope of the profession is that you will, by vigorous and energetic action at this time, redeem the past and regain the confidence which is fast slipping away from you. The profession has a just right to have a voice in the general policy of its educational institutions, especially so since the schools have joined in a great national organ-

ization for mutual benefit and protection. The National Association of Dental Faculties has appointed a Law Committee to threaten and prosecute any state board that refuses to recognize the diplomas of any of its members. It has not appointed an Investigating Committee to see that all of its members are doing good work. Will this great organization continue to protect weak, lax schools in their weakness and laxness, and will it continue to add to the number of that sort of schools already admitted. School men, the eyes of the profession are upon you ! What will your policy be ?

PRESERVATION AND SURGICAL EXTRACTION OF ABNORMAL INFERIOR THIRD MOLARS.

By D. Hurlbut Allis, D.D.S., Springfield, Mass. Read Before the Connecticut State Dental Association, May 15, 1900.

Eruption of the third molar is the most uncertain of the entire thirty-two teeth. In the first place the time of eruption is varied, the tables giving it a wide range from seventeen to forty-five years of age, but the writer has on several occasions seen it appear at fifteen years and once at nearly sixty. A great many of them never come at all, often to the relief of both patient and dentist.

Only about fifty per cent of the third molars are found in their normal position, strong and of service to the patient at the age of twenty-five, many becoming badly decayed before eruption has taken place. The location of these so far back in the mouth, and the gum tissue which often overhangs the slowly erupting tooth, render it almost impossible for the patient to reach every part of the tooth in cleaning, thereby predisposing them as excellent breeding-ground for the bacteria which soon produce decay.

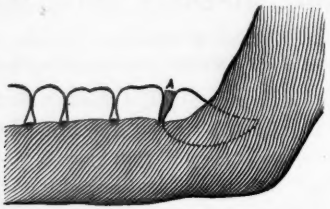
I will simply mention the superior third molar as nearly always coming normal, its only variation being that of growing at right angles to the jaw outward and into the cheek, in which case it is usually easily removed by the forceps and operating from the side.

The same outward-growing tooth in the inferior jaw is more difficult to extract, as the tooth itself is larger and more firmly fixed and the jawbone narrower and more likely to fracture. The removal of these outward-growing teeth and the normal ones which require a backward lifting pressure, are generally accomplished by the cutting forcep, modeled from the pattern of Dr. Physick of Phil-

adelphia. It is a dangerous forcep in the hands of a novice, but powerful and useful when experience is back of it.

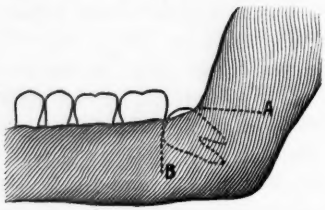
The abnormal condition I wish to illustrate is one we all have seen, and as dental surgeons must meet and render aid becoming our profession—the inferior third molar growing forward from the ramus of the jaw, presenting the articulating surface against the distal face or root of the second molar.

The first thing I like to do is to take an X-Ray photograph of the jaw, which gives something definite for a plan to work upon. Next I classify them into one of two classes: First, teeth which can be righted and preserved for future service, as illustrated in chart No. 1. In three years I have turned six teeth from this position to



an erect and serviceable place, simply by keeping the parts perfectly dry with absorbent cotton rolls and packing a filling or wedge of red base-plate gutta-percha (A) solid between the two teeth. This filling keeps the tooth from decaying and also acts like a wedge, its tendency to bulge turns the tooth backward and upward, if the upper tooth does not interfere and the roots permit. This filling should be changed every four to six months.

Second class. Chart No. 2 illustrates a drawing from an X-Ray photograph of the jaw of a lady about thirty years of age, very



stout and plethoric. She came after suffering nearly two weeks with neuralgia. The distal buccal cusp was just visible above the

gum, yet it had been in that position so long that it had decayed badly, and passing cotton on a broach between the teeth caused great pain, showing an exposure of the pulp. I gave the patient ether, and with a lance cut the gum from A to B, following the top of jaw to exposed cusp, then from second molar cervical edge to B. The gum was next dissected back and away from the bone and held out of the way. The largest round bur, No. 11, was selected (I have had some special large ones made, Nos. 14 and 15) and a large fissure drill was also used. With the rapid and steady power of the electric engine the burring away of the ridge and buccal surface or septum of the jaw covering the tooth is generally done very quickly. Care should be taken not to interfere with the inferior maxillary nerve and blood-vessels. The tooth was then rolled over from the inside with an elevator, and pain left the parts immediately after extraction. Aseptic treatment was followed up very closely for a week, when the patient was dismissed. Aseptic instruments and surroundings as far as possible, followed by aseptic treatment, are the foundation of success in these operations. The value of such a procedure must be judged by the saving of the second molar, the complication arising, and the time consumed.

EDUCATIONAL WORK.

By J. D. Moody, D.D.S., Los Angeles, Cal. Read Before the Southern California Dental Association, at Los Angeles, Oct. 3–4, 1899.

I believe that, with few exceptions, on leaving college the graduate drops all study and even any serious reading. For obvious reasons this is true of the dental more than of any other profession. So long as this is a fact we cannot truly claim to be a learned profession, nor call ourselves doctors. We have been making claim to this title, and in proof of it have shown our excellent and complete college curriculum, our diplomas, and the splendid work of some of our scientific men, and have diligently made use of the said title. As general intelligence increases the public is becoming more exacting and justly requires that we should demonstrate our right to be called a learned profession.

The cursory reading of a new book now and then, or glancing over the new journals on their monthly appearance, does not constitute study in the sense in which educated men use that term. There are two kinds of study: First, that done by the undergraduate

while preparing for his life work, the mere storing of the mind with facts and rules which are later to be applied to actual practice. Second, taking these same facts and rules and reasoning out the philosophy of them, deducing new facts and rules; in short, making science.

Real study is the putting of two and two together and then reasoning out why the result is four. It is empiricism to simply apply the accepted result as a basis for one's work, and yet we are doing just this thing every day of our lives, living off the vital energy of other minds without ever a thought of the responsibility which our assumed position entails upon ourselves. We shall never make the proper advance as a profession until we change our methods. For want of this the rank and file are missing the advantages pertaining to their high calling, and are in danger of degenerating into mere money-making machines. Our whole lives should be a constant education.

Why do we not do more and better studying? Primarily because of the lack of trained habits, but with proper effort this can be overcome. While in college the student is compelled to read, study and think in company with others. There is a stimulus in this associative work that is wanting in the private effort, and unfortunately there are but few of us who have the trained habit of study, or the determined will to pursue any line of research very far by ourselves.

I believe that with a persistent and intelligent determination to improve our present circumstances we have in our dental societies the means for taking a great step forward in this matter. Let me give some hints along this line: Suppose we sometimes vary our program, and instead of having four or five papers on that number of different topics, by as many men, that we arrange for several persons to work on some one line for months, and then at a stated meeting bring to us the fruit of their labors. This will make six men study and the impulse gained by them will not be lost. The example of these six will to a certain extent influence others to like work. Systematically and wisely pursued this plan will revolutionize any society.

Again, let our society appoint a number of men to take up some study, say, amalgam, bacteriology, histology, manufacture of artificial teeth, filling root-canals, or any other topic related to our

work. Have them make as exhaustive a study from books or experience as possible in, say, six months. Let them meet once in a while to compare notes, then at the end of the time set give us their individual judgment formed from the research. This would have an educational value of no mean import.

For another occasion assign to a certain number a book to review, or some article in a journal to criticise. Require in either case as thorough work as the dentists are capable of, and when through let them meet, compare notes and afterwards give us the results of such study.

Again, on some evening have each one present tell what journals he takes, and give the reasons for his selection, or have some one who is competent give a careful estimate of the different journals as a guide for dentists in subscribing. At another meeting have the members tell what dental books they have read during the year, and why and how they read them, and what help, if any, they derived from such reading. Such meetings could often be repeated with profit, providing they are always well arranged for beforehand.

We all use rubber; some prefer one make, some another. Can we give an intelligent, accurate, scientific reason for our choice? Set a dozen men to making tests, not guess-work, but real tests, and afterwards give us the results and the methods used. We read many practical hints and try them, after a fashion, pass our judgment on this inaccurate evidence, and others blindly follow our opinions. When a man makes a statement in a journal, giving his process upon which it is founded, we should not positively accept or condemn until after we have made accurate trial of it.

One of the most potent factors for good in this direction might be a society formed especially for study and experiment, which could be composed of two or a hundred. It would not necessarily have as members only the profound student or the strictly scientific man. Just such men as now make up our society could profitably enter upon such work and carry it to a successful conclusion. Grade the task according to the ability of the members, but aim to raise the standard as rapidly as possible.

Let me give you an example. Our discussion yesterday on the electric root-drier missed the real point in the position taken by the essayist. So far as appeared, Dr. Moore's experiments stood alone, and these were shorn of much of their value because they had not

been checked by comparison with others. Suppose six men, indiscriminately picked from our society, had been assigned to study up and report upon root-drying. Under the lead of their chairman, who should be trained in study, they would have a preliminary meeting to arrange the line of work and its details. Then from time to time they should be called together to compare notes and to check any tendency to wander into irrelevant paths. At the end of six months we would have six men who would say—not "I think," but "I know." Men don't like work naturally, but when shown some pleasure or good in it they will take hold with avidity.

You recognize in these hints given that the principle upon which success will depend is *associative* work, and this intelligently and persistently pursued will prove to be in the highest sense educational work. Back of all this, however, lies a deeper and further-reaching principle, namely, that mental power when used develops more power. Associative work is but a means to this end.

And now I close with an appropriate admonition by one of the world's master thinkers: "Finally, brethren, whatsoever things are true, whatsoever things are honest, whatsoever things are just, whatsoever things are pure, whatsoever things are lovely, whatsoever things are of good report, if there be any virtue, and if there be any praise, *think on these things*."

Discussion. *Dr. M. E. Jordan, Los Angeles:* Dr. Moody's idea of associate work is excellent, for we know how necessary some such stimulus is to start us in the right direction.

The essayist's suggestion that societies appoint the men, and not necessarily the most learned ones, is very good. It not infrequently happens that many retiring men, whose voices are seldom heard in the societies, are great readers and deep thinkers. If to them, as well as to the more fluent speakers, were assigned some of the topics indicated, we might have opened to us unexpected mines of great richness.

The title of the paper opens up to me another line of educational work, namely, that of the laity. The perusal of a school physiology and its chapter on "Teeth and Their Care" will edify any dentist. It is not, however, the education of the children only with which we are concerned, but that of the teachers and mothers. If they knew, for instance, that the first permanent molar erupted between the ages of five and a half and seven we should very sel-

dom be called upon to treat or extract these teeth before the child is ten years old. Irregularities would also be rare if those in control only were aware that the early loss of deciduous teeth and the habit of thumb-sucking were largely responsible for the trouble.

ERYSIPELAS—CASE IN PRACTICE.

By M. C. Smith, D.D.S., Lynn, Mass.

The following case was of special interest to me, as I do not remember of having seen anything similar. The patient was a negress, aged about 30, and she presented to have some teeth extracted. On examination I found the right cuspid badly ulcerated, and the probable cause of her trouble. The face was swollen and there was a well-marked facial erysipelas, with the center of the lesion over the cuspid fossa. What was the proper course to pursue under the circumstances—extract those teeth and run the risk of spreading the disease, or wait until the erysipelas had subsided?

Topographic Relations of Brain, Frontal and Maxillary Sinuses, and Venous Sinuses of Dura Mater to Walls of Skull.—Paul Regnier and Jules Glover: The authors describe their researches in which radiographic methods were employed in the investigations of the anatomy of the skull and face. The points especially studied were the topography of the cerebral convolutions in relation to the venous sinuses of the dura mater and the skull, and the cavities of the cells of the mastoid process and of the facial and cranial bones, and also the interior cavities of the brain. They took the hardened brain freed from pus and placed it back in the skull for the skiagram. They report that in examining a child's head with a fluorescent screen it was sometimes possible to see a clear patch corresponding to the median portion of the brain that exists normally in young infants but its transparency is more apparent in the pathologic state when the ventricle is dilated with fluid It is easy, by mere examination with the fluorescent screen to verify the transparency and the condition as to emptiness of the frontal and maxillary sinuses, and perhaps even of the mastoid cells, with much more exactness than by making use of the ordinary electric light. Instead of employing a powerful light introduced into the mouth for the illumination of the maxillary sinuses, or applied to the upper and inner margin of the orbit for the illumination of the frontal ones, they recommend recourse to cylindric focus tubes. With this object, and in order to simplify the manipulations, the tube is fixed on a small and light stand made of ebonite, or even of wood, and the observer wears caoutchouc gloves to protect himself against the shocks from the current. The tube can be brought near to, or removed from, the patient's head, until the proper distance is found. without causing any inconvenience or danger. In examination of face all the cavities become visible at the same time.—*Lancet.*

Digests.

DENTIGEROUS CYST. Berger (*La Presse Medicale, 1899,*) operated upon a boy thirteen years old who had been suffering for a year from a cyst which developed to the right of the medial line upon the anterior surface of the upper maxillary bone, pushing forward the cheek and pressing on the palatine vault. The trouble began with a swelling of the cheek, which extended to the furrow, separating the cheek from the ala of the nose and finally quite obliterating this. All the teeth were present, but the incisors were deviated somewhat. On lifting the upper lip a bosselated swelling was found involving the mucous membrane of the gum and exhibiting the dark color of cyst of the jaw. The tumor was fluctuating. Most of the anterior wall of this tumor was removed, allowing its gelatinous liquid to escape. The cavity left did not communicate with the antrum, and contained a supernumerary tooth developed in the inferior wall of the cystic cavity. Cleanliness and drainage accomplished the gradual obliteration of this cavity.

Berger holds that there is no clinical difference between the dentigerous cysts and those which have been variously designated as alveolar, periosteal, etc. The situation of the tumor, its relation to the alveolar border, its extension upward, correspond precisely to the periosteal cysts. All these cysts arise from paradental epithelial debris. Care should be taken in opening these cysts not to break into the maxillary sinus, nor to destroy the thinned palate.

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BOER PHYSIC. The *Chemist and Druggist* publishes the following account of the pharmacy of the Boers: "The average Boers are good customers of the chemist because they take a good deal of medicine on account of their internal torpidity. This is due to their movements being slow and the eating of much doughy bread. The Boer is slow to change, and slowest, to say the least, in changing the kind of medicine which he uses. It is the same kind that his father and grandfather have used, and he says it is therefore good enough for him. All the packers of Dutch medicine advertise that their products are manufactured according to the 'original formulas' procured direct from Holland, and caution the people to be careful of what they buy in this way. The Boer does not use patent med-

icines. He begins his treatment by giving a good purge, and if that does not succeed in curing the disease he goes through the entire list of medicines in the 'huis apoteek' or family medicine chest. Most of the drugs in this chest are herbs and native preparations, the medicinal value of all of which being quite questionable. There are what are termed 'traveling chemists' in the land of the Boers, men who go from place to place, engage a room, advertise that they are in town, and proceed to sell their rubbish to the unfortunate Boers who may 'happen in.' These men are charlatans, and at one time an effort was made to prevent them from practicing their quackery, but the attempt fell through through want of support."

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LEECHES AND BEDBUGS AS GERM-CARRIERS. In his experiments, Mühling (*Centralb. für Bakter., 1899*) used the bacillus of anthrax and proved the existence of an internal infection of anthrax in bedbugs which had fed on the blood of mice likewise affected. Furthermore, a horde of bacteria settled on bugs which had been allowed to wander over the remains of mice infected with anthrax. The infected bugs had present in their intestinal canal virulent anthrax bacilli which finally passed away unchanged in the feces. Mühling does not state that he experimented further with the view of ascertaining whether or not any virulence remained with these bacilli voided in the feces. The bugs, however, were not visibly affected by the bacillus anthracis, which fact the author proves by stating that he kept such a bug alive and under observation for six weeks. The bite of such an infected bedbug upon a mouse was without result. However, if, while sucking at the wound the bug was crushed with a sterile glass rod, and rubbed therewith over the surface of the wound, thereby insuring the freeing of the intestinal contents and simultaneously of the contained anthrax bacilli, there was obtained in every single case as a result the infection of the mouse. The author believes that the bedbug only sucks blood from its victim, and that no germs can escape from it to its host in the process (?). Leeches are very similar to bedbugs in these respects. Thus, they do not succumb to anthrax. Mühling declares that he kept such an infected leech living for three months. On the other hand, however, the anthrax germs, after having been taken up by the leech, die in that animal's intestinal canal after so short a period as a single day. The author did not satisfy himself as to the reason

for this. Mühling concludes that even though it should accidentally happen that the germs attached to the external surface of the leech find their way into the wound, they would be sucked up by the leech in the process of blood-transfer, and therefore that parasite could be used therapeutically without any danger of infecting its host, on both man and animal.—*Med. Rec.*

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SALIVARY CALCULUS FROM THE SUBMAXILLARY GLAND. By S. H. Dessau, M.D. A woman, twenty years of age, had complained for three days of pain upon movement of the tongue and jaws and of a swelling underneath the tongue on the left side. On examination I found a lymph node, enlarged, tender and movable, in the left submaxillary region. A portion of the sublingual gland of the same side was also swollen; and there was a decayed molar in the lower jaw on that side. No digital examination of the mouth was made. The patient had had a mild attack of influenza during the previous week and it was thought that some infective process had been lighted up in the root of the decayed tooth.

The following day the inflammatory process had progressed, causing increased enlargement of the sublingual gland, the surface of which was excoriated. There was also increased swelling with tenderness of the submaxillary lymph node and induration of the floor of the mouth. There was a free flow of saliva. The speech was thick and there was inability to open the mouth to any extent. Temperature was 101 degrees F. The condition suggested some slight suspicion of Ludwig's angina.

Suppuration, with spontaneous rupture of the ranula, occurred the same night and a calculus was passed from Wharton's duct. The calculus was eleven-sixteenths of an inch long and two-sixteenths of an inch thick at the central portion, tapering to a rounded point at either end. A fine probe passed five days later showed the duct free from further calculi. It is needless to say the patient promptly recovered from her unpleasant symptoms.—*Medical News.*

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PERFECT BACKING. By Dr. D. A. Peoples. Plano, Texas. From the time when I was first tanght to "back up" porcelain teeth for the purpose of soldering them to plates and bands, I have longed for some plan by which the fluids of the mouth (and in some cases

I have seen more than fluids) could be excluded from the space between the backing and the porcelain facing. I do not remember having seen anything in our journals or other publications which has even made a pretence of being such a "perfect" backing, the nearest approach to it being the various methods of swaging one that will closely fit the facing. Then, too, I have seen the facings which we placed with such care crush off under some great (?) strain, because of their frailty, thus marring our work and giving us a difficult piece of repair.

To overcome this imperfection and weakness I have devised the following method, which can be readily followed by all of the profession accustomed to metal working who have a porcelain furnace large enough to take in one or more teeth, and who know how to use it. Cut a piece of thirty-six gauge platinum somewhat longer than the tooth to be backed usually calls for. After punching the pin holes, bend back the upper and lower edges of the backing in a *sharp* angle, using the edge of a sharp blade of a pocket knife or any such instrument, at the same time making it assume a slightly convex shape. When in place on the tooth you will observe that it does not go all the way to either the biting or gingival edge. Now fill in with porcelain body between the tooth and backing and bake in your furnace, being careful that none of the porcelain body is left on the outside of the platinum, but that it is filled in solidly between the facing and platinum, giving it a second or even a third baking if necessary.

You now have a tooth backed with platinum which is much thicker at the pins than as ordinarily prepared, incomparably stronger in resisting the strains which so often mar our work (as it does not depend upon the pins alone to keep the facing in place, but all is solidly fused together), and it *absolutely excludes all fluids*. You may add to these points of excellence the freedom of the biting edge from the "line" of gold, which is so often objected to by the esthetic portion of the profession or their patients, and freedom from the danger of melting down the backing in the future solderings, and yet the platinum does not show through and darken the color of the facing.

With this perfectly backed tooth you now proceed, attaching it to plate, or band or bridge, as you desire. Of course you will be careful to not allow the flux to get on the exposed porcelain between the

edge of the backing and the biting edge of the tooth, but will carefully cover with the investing material, else you will be likely to crack it in soldering. If you should wish to grind away any of the gingival edge, it would be better to not grind far enough to remove the "angle" of the platinum backing. Nor is it necessary to have a flat back tooth or facing, as the plain (or a gum, if you want it) rubber one can be used just as readily.—*Items, April, 1900.*

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HEMORRHAGE. By Alfred Cocker, L.D.S.I. A gentleman, aged 25, called to have a stump of the upper second molar removed. It was so loose that it could easily have been lifted out with an excavator. It was, however, extracted with a stump forceps and the patient dismissed. About two hours later he returned, as the bleeding had not stopped. Several unsuccessful attempts were made throughout the day to arrest it. Cotton plugs dipped in carbolised resin and then in powdered alum were first tried, then tinct. perchlorid of iron, and afterwards a cork compress on the top of the plug, but all to no purpose. The socket was so shallow that it was impossible to get a plug to hold tightly. I then obtained a model, and as there were two teeth standing on the same side of the mouth, viz., the first bicuspid and the third molar, I made a band for each of them, then softened a piece of base-plate and pressed it well over the model of the bleeding socket (hard-bake or shellac will do equally as well). The bands were then heated and placed into position in the plate, this being fixed in the mouth over a tinct. perchlor. plug. By this means the hemorrhage was quickly arrested. The time occupied from taking the impression to finishing the plate was about twenty minutes. The point I wish to draw attention to in this communication is the use of shellac as a temporary plate in cases of persistent hemorrhage.

The second case is that of a gentleman aged about 40, a sanitary engineer. He called to have a number of teeth extracted, preparatory to being fitted with a partial upper and lower set of teeth. In the upper jaw I cleared out all except the two cuspids and the two second molars, and in the lower jaw all except the left second bicuspid, the four centrals, and the right cuspid. Late in the evening of the same day he was bleeding badly and sent for me. I found him roasting himself before a hot fire, as he was feeling very cold. On examining his mouth I saw the blood was streaming from the socket

of the left lower cuspid. After a time I succeeded in completely arresting it, and heard nothing further of the case till a week later, when he again sent for me, as he had been bleeding profusely for a considerable time. When I got there it was quite evident that the loss of blood was serious, and it was only after making three or four attempts to stop it that I discovered that the cuspid of the upper jaw shut slightly into the socket of the cuspid of the lower jaw. I then determined to make a plate similar to the one in the first case, except that the model was so cut that the edges of the plate when finished would fit so tightly as to make perfectly sure of the bleeding being arrested. When I had fixed it in position after again plugging the cavity the bleeding quickly ceased. The plate was worn for a fortnight. The point of interest in this case is that the recurrence of the bleeding was undoubtedly due to the upper cuspid shutting into socket of lower.—*Jour. Brit. D. A., April, 1900.*

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EUROPHEN IN DENTAL SURGERY; ITS SPECIAL VALUE AS A SUBSTITUTE FOR IODOFORM. By K. J. Schumann, D.D.S., Athens, Tenn. *Europhen in Root Canals.* Apply rubber dam. Clean the canals with suitable broaches, follow with canal drills, wash out the debris thoroughly. After cleaning the canals with instruments, take one or two drops of carbolic acid crystals, pour out upon cement slab, take a few grains of europhen and rub into carbolic acid until you have thick paste. Wrap a smooth, fine broach with a few fibers of absorbent cotton; pass this into the paste of carbolic acid and europhen, introduce it into root canal and by a gentle pumping motion fill the canals full of the paste. After having assured yourself that they are full, light the alcohol lamp and pass a smooth broach through the flame until red hot, introduce it quickly into the canals, and repeat this until you cease to hear the paste "fry." Fill canals to apex with gutta-percha points previously warmed and rolled in europhen. Fill cavity in usual manner. I claim for this method rapidity, thorough asepsis and a sweet smelling canal. Iodoform may be used in the same manner, but the odor is horrible, and it will not work so well. I have tried both. The europhen is in many ways better. In rubbing it into carbolic acid a certain per cent resolves itself into iodin which, with its other chemical constituents, renders it a valuable paste.

Europhen is extremely light, palpable and almost entirely free from obnoxious odor. In external fistula of the cheek, etc., it can be used to a great advantage. I give case of alveolar abscess with complications. Miss M., aged eighteen, presented with aching lower molar so badly broken down that I advised extraction. She refused the operation, leaving office without treatment. Saw nothing of patient for six months, when she again called with abscess of alveoli involving check and opening beneath superior maxillary bone, with considerable ulceration and disintegration about point of egress. Extracted roots of molar, washed sinus through cheek with protargol ten per cent, packed external sinus with gauze dusted with europhen. Repeated protargol ten per cent for ten days, dusting external wound with europhen, by which time patient was dismissed cured.

Mr. G., aged twenty-six, abscess of antrum with rhinitis. Treated abscess through second bicuspid by four per cent protargol solution. After a few days symptoms subsided somewhat. Began with europhen, 3 vii.; boroglycerid, 3 j. M. Passed application saturated with above into nose, swabbing the sniderian membrane twice a day. Two weeks under treatment with cure.

Mrs. J., aged nineteen. Twelfth year molar had been extracted, resulting in "dry socket." Syringed with protargol ten per cent, afterwards packed with gauze dusted with europhen. Complete healing of pocket in two weeks.

Mrs. W., aged forty-six. Right upper second bicuspid devitalized. Had been aching for weeks. Patient had been to the dentist who treated her regularly for thirty days with no benefit. She requested an extraction which I declined, so she finally consented to allow me to treat the case. I passed fine broach through roots, clearing away everything I could find. Pumped canals full of europhen and repeated same treatment for two days. Third day filled canals with europhen paste, passed red hot broach through canals, filled roots, painted the gum over the tooth with tr. iodin—tr. aconite rad. ää; filled cavity and have had no further trouble.

Europhen can be readily made into paste with creosote, carbolic acid, eucalyptol, boro-glycerid, etc. In pyorrhea I first remove serumnal calculi with suitable instruments, wash pockets with twenty per cent protargol solution, and pack the pockets full of europhen. Results are immediate. In apthous stomatitis wash

mouth with protargol ten per cent, and if corners of mouth are involved in ulceration dust with europhen. One great advantage which europhen has over other powder dressings, which is peculiarly adapted to dental surgery, is that if from any cause whatever moisture should enter through the apical foramen, the europhen coming in contact with the moisture immediately gives a pasty solution of iodin which, with its other powerful germicidal elements, makes small the chances for alveolar abscess.—*Items, April, 1900.*

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THERAPEUTIC USE OF WATER. By George P. Sprague, M.D. To use water scientifically its physiological action in health and disease must be studied as have those of all others of our standard remedies. Many men throughout the world are now testing, weighing, counting and measuring the results of the use of water in disease. In doing this they are bringing forth new physiologic data which compels us to alter some of our most important preconceived ideas on such matters as the causes of heart-failure, the importance of reflex action, and the manner of heat-regulation. We sometimes lose sight of the fact that the skin (through whose 20 square feet of surface we secure the benefits of hydrotherapy) is really an enormous gland richly endowed with nerves, secreting and excreting organs, and a network of bloodvessels which can contain at one time about 35 per cent of the entire blood supply of the body. The nerves which supply the skin are composed of medulated and nonmedulated fibers, the functions of sensation, secretion and heat-regulation requiring a large supply of nerves from both the sympathetic and cerebrospinal systems. The function of sensation requires a most complex system of nerves of general sense, nerves of tactile sense and the specialized nerves of the latter group for the appreciation of heat and cold. In the words of Baruch, "the cutaneous nerve-endings stand guard, as it were, over most of the functions of the human body; they are constantly exposed to irritation by heat and cold, which they convey to the vasomotor, respiratory and cardiac centers, and to the muscles, in order to arouse in them by reflex action such a degree of enervation as may be required to ward off any damaging influence that might approach from without." When these nerve-endings convey their message to the cardiac center the heart is strengthened and slowed. When they affect the center for respiration, breathing is slowed and deepened.

In securing vasomotor action the skin may be emptied of its blood, or its vessel so relaxed that more than one-third of the total volume of blood may be within it, according to the wish of the physician. The anatomies and physiologies of even ten years ago contain a strangely vague and brief account of the sympathetic nerves, and of reflex action; but we have progressed since then so that we now know that the proper application of water to the skin restores the heart when digitalis and strychnia will not; expands the lungs and increases the chest-measurements when exercise and tonics fail; brings color to the cheeks of the chlorotic girl more rapidly than does ferrous carbonate, and that it will often check the advance of phthisis after drugs and climate have been used in vain. These are broad claims, but they have been amply substantiated, and we know why they are facts. We have been taught that the terminal arteries have no inherent power to change their own calibers, but Prof. Woods Hutchinson defends the claim that the bloodvessels have a rhythmic contraction and expansion of their own, in addition to the contraction caused by action of the vasomotor nerves and the relaxation caused by drugs, heat, etc. The theory certainly seems more reasonable than that all blood-propulsion depends on the heart alone; it also accounts, as no other theory does, for the circulatory phenomena noted in the hydriatric procedures. He gives to this the expressive name of the "skin-heart." Romberg and Paessler, German investigators, found that the failing heart so justly dreaded in febrile conditions is not really changed in its muscular quality, but that the lack of tone in the peripheral vessels due to vasomotor paralysis is the real cause of its weakness. Restore this tone, the heart is better filled and regains its force.

Hare illustrates this by comparing the heart with vasomotor relaxation to a locomotive on a slippery track; the rapidity of its action racks the heart as the revolving wheels do the engine; giving digitalis makes it worse, as does feeding the fire of the engine increase the strain on it. But give the heart the normal vasomotor resistance (put sand on the track), and a slower, stronger action is the result. Bearing in mind that all increase of function is dependent on increased blood-supply, and that increased circulation of blood results from a slow heart beating strongly, in connection with a heightened vascular tension, and we see theoretically, as we find in practice, that the lungs absorb more oxygen, that the kidneys

secrete more urine with an increased percentage of toxic solids, that intestinal peristalsis is increased, that the skin itself becomes more active as the result of hydrotherapy. This briefly covers the more important physiologic factors in the use of water, though many important points must of necessity be left untouched.—*Phila. Med. Jour.*

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TRICHLORACETIC ACID. By J. S. Ashbrook, D.D.S. Trichloracetic acid ($C_2HCl_3O_2$) is prepared by the oxidation of chloral hydrate by means of nitric acid. It consists of colorless, rhombic deliquescent crystals. It belongs to a group of three acids, the other two being the monochloracetic and the dichloracetic acids, and the difference in their composition is due to the proportions of chlorin they contain. They have similar properties.

Trichloracetic acid is employed in dental practice as an escharotic in the treatment of pyorrhea alveolaris, on account of its destructive effect on pus-secreting surfaces of the alveoli of teeth, for which purpose a 10 per cent solution is applied. It is also employed for the removal of vascular tumors of the pulp, and hypertrophy of the margins of the gums and epulis. Dr. Kirk speaks of using this acid in the strong solution of about 90 per cent for the removal of such growths. It has also a solvent effect on calculi upon the roots of teeth, a 10 per cent solution in water being recommended, and has also been employed on the overhanging and resistant gum of third molars. A 1 per cent solution has been successfully employed as a mouth wash for its astringent and stimulating action in inflammations and ulcerations. It is also used in combination with pyrozone in the treatment of alveolar pyorrhea and in such a solution, as well as alone, its effects have been remarkably satisfactory. Trichloracetic acid may be combined with any suitable alkaline solution, such as soda or magnesia, when it is desirable to limit its action. It has a peculiar power to soften and remove sanguinary deposits, and it acts without injury to the teeth or soft tissues.

Diluted with water to a 3 per cent solution it is an excellent local astringent and stimulant. Dr. Harlan recommends it for removing the overlying gum for third molars, as it destroys the tissue without hemorrhage or subsequent soreness. It is also employed to gain access to roots of abscessed teeth through a fistulous opening, one crystal, followed by more, being placed in the fistula; it is also used for removing hypertrophied gums and gum polypi.

Trochloracetic acid is a stimulant, refrigerant, antiseptic, astringent, alterative and an escharotic. As a stimulant it is most useful in treatment of receding gums; some claim it will cause the gums to recede. This has not been my experience. I know of one case in particular where the gum had receded fully one-eighth of an inch; after two weeks' treatment the gum was almost in its normal position and has remained so for eight months. In treating gum overhanging lower third molars it is most valuable, as you know these cases often cause great trouble, becoming so inflamed that the face is swollen, making mastication difficult. Two or three applications of this acid will in most cases cure this severe condition, the first application giving instant relief. In this case it acts as a refrigerant, antiseptic, astringent and escharotic.

After removing salivary calculus, which collects in such large quantities on the lower anterior teeth, causing them to become very loose in their sockets, one application in most cases will harden the gums and prevent the accumulation of the calculi for a long period. In treating devitalized pulps it is especially useful as an antiseptic, applied on the end of a broach just before filling permanently. In cases where you have a large apical foramen you can readily see its value. In filling cavities, where the gum overhangs the cavity, making it difficult to prepare on account of the bleeding, apply a little acid, and proceed without further trouble. Last, but not least important, is its use in the treatment of a fistula from alveolar abscess. With cotton saturated with the acid carefully placed around a broach you can reach the bottom, and in most cases the fistula disappears after two applications. In all the above cases I use the pure acid in small quantities. In forty-eight hours all trace of its action has gone, except the good results; the mucous membrane peeling off, as it were, and a new layer formed. A number of physicians have informed me that they use it and find it valuable in all the properties I have mentioned.—*Brief, April, 1900.*

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ALKALINE SALIVA. By M. H. Fletcher, D.D.S., M.D., Cincinnati. Read before Ohio State Dental Society. Dec. 1899. Miller says, "The saliva of cattle, sheep, dogs, rabbits, etc., is essentially strong in alkaline reaction;" this may account for their perfect digestion, as well as their immunity from decayed teeth. This is not true of mankind, however, and in order to compensate

for the physical defects of civilization, caused by eating prepared foods, the mouth should have conscious and continual attention. One demand seems to be that the saliva be artificially restored to its normal alkalinity. Decay of the teeth may be arrested or at least proceed very slowly when the saliva is normally alkaline; the contrary is held to be true by some, but as stated, it is probably due to the strong alkaline saliva of animals that their teeth do not decay. The exception to this rule is found in domestic animals, or those kept as pets or in confinement and fed upon prepared foods.

Lactic acid is formed in the mouth by the action of bacteria upon all cooked starches, and is thought to be the great cause of decay of the teeth. A small portion of some of the sodium compounds dissolved in the saliva quickly penetrates the irregularities or cavities in the teeth, neutralizing the lactic acid of this ferment, as well as other acids found in the mouth. The promptness with which sweets penetrate cavities in the teeth, producing pain and assisting decay, gives a hint as how to try to arrest this process. The saliva is already in the places where the damage to the teeth is being done, and by utilizing it to dissolve a suitable alkali the seat of trouble is reached at once. Normal saliva is slightly alkaline, but the alkalinity is so weak that few mouths are capable of prompt recovery from an acid condition, neither is the alkalinity usually strong enough to counteract the acids of decay, hence it seems rational to endeavor to supply this deficiency.

The mucus, of which the saliva is partly composed, does not dissolve in water, ether, alcohol, or dilute mineral acids, but dissolves readily in alkaline solutions; hence any attempt to wash the saliva from the cavities in and about the teeth with anything but an alkaline solution is much like trying to remove grease without soap—the undisturbed globules of mucus remaining filled with microorganisms. The foregoing seems to indicate that an alkaline fluid is needed at the portal of the body for protection.

It is an accepted fact that the mouth is constantly inhabited by numerous germs, many of which are disease-producing. Within the short space of an hour the particles of food remaining in the mouth become filled with microbes of many varieties. Saliva freighted with these germs being constantly swallowed may produce fermentation in the stomach, which results in eructations, sour stomach, headache, etc. Clinical experience shows that a small

portion of a suitable alkali allowed to dissolve in the saliva and swallowed will quickly correct the disorder. If the saliva is kept in its normally alkaline state, or in excess of normal, many of the acid-forming, fermentive and putrefactive processes are prevented in the mouth, the saliva being swallowed in this purer state assists digestion instead of interfering with it.

The physiology of the mouth and stomach are so related that a remedy which will arrest putrefaction and fermentation in one organ may do so in the other, and mild alkalies are most accepted for this purpose, some form of soda being oftenest used, that of bicarbonate most frequently. This particular form is objectionable, however, because alkaline carbonates are utilized in producing lactic acid.

Considering the subject from the foregoing standpoint, the writer has for a period of years had it in mind to endeavor to meet these demands with a suitable mouth preparation, and for some months past has been experimenting to this end. The method of procedure was about as follows: First. All things that were considered inefficient or objectionable in existing dentifrices and mouth washes were excluded. The pulverized chalk, seashells, pumicestone, cuttlefish bone, etc., seem always to have been used, and with this idea of polishing the teeth, but this is not what is needed, for their natural surface is the best, anything which polishes also wears; the object then should be to keep them clean, and no more. So far as the mechanical part of a dentifrice goes, if the earthy matters usually employed are coarse enough to readily cleanse the teeth, saw-toothed and other abrasions may follow with their evil results, and if they are so fine as not to produce this effect, little good from their use can follow.

Dr. A. H. Peck's analysis of a number of mouth preparations proved that but one of many had the essential feature for the purpose desired, viz., that of alkalinity. The only soluble alkaline preparations which have been much used for the mouth are those containing soap, but soap merely lubricates each particle of the powder and the bits of food about the teeth, causing the brush to slip easily over instead of removing them. Soap will relieve the mouth of oils and mucus, as it will the skin, but does not remove tartar nor destroy bacteria. Toilet soaps as a rule are not strongly alkaline, therefore cannot neutralize the acids of decay to any great degree, nor can they be relied upon to cleanse or purify sufficiently.

The foregoing facts necessitated a new start, the demands being as follows: First. To find a mechanical cleanser which would not abrade, and that a dentist might conscientiously recommend, and a patient feel free to use without danger of injury. Second. The saliva must be utilized for dissolving an antiseptic and anti-acid, so that the cavities of decay will be penetrated by it, thus arresting caries, and if possible prevent its recurrence by continued use; the acids found in the mouth from any source must also be counteracted. Third. Something must be found which would act on the mucous membrane, for the purpose of keeping it in health or restoring it when it shows signs of disorder, also to be a suitable treatment for lesions of the gums or mucous membrane. Fourth. With all these demands it was necessary to find a combination, the ingredients of which would be agreeable to each other and acceptable to the stomach, for the saliva passes in almost a constant stream to this organ, a fact too little considered in treatment of the mouth.

Giving the results of months of experimenting without many details; the mechanical cleanser and menstruum was first taken up; something softer than the softest ivory must be used, so wood fibre of many kinds was first tried, with the result of making a very efficient dentifrice from cedar, boxwood, sandal-wood and other very fine sawdusts, but each had its own peculiar flavor, many of which were undesirable, some giving up tannic acid, also objectionable, and the woody fibre remained about the teeth and under the tongue with a disagreeable effect.

Finally the raw hard parts of various cereals were taken up with better results, and those of rice and Indian corn selected as being the best; these are to be used in the form of a coarse flour. This material is of itself a most efficient dentifrice, cleaning perfectly without injury. The little blocks from the grains are like so much fine sand or emery in appearance, but are very much softer than the softest enamel or dentin, consequently cannot abrade them, yet they are harder than the particles of food, and of most deposits of tartar, and being usable in so much coarser condition than earthy powders, they are much more efficient, which a trial will prove. The argument has been advanced that this material being starchy would only assist the fermentive process of the mouth. This position is untenable from the fact that starch can not ferment until it is hydrated, and is hydrated quickly only by moist heat or caustic alkali.

As to the *chemical part* of the *question*, many things were considered and from various standpoints. Sodium borate and potassium chlorate were finally decided upon as being the most suited to all the conditions and to each other, they have proved to be clinically what they promised theoretically; the valuable therapeutic properties of both remedies are familiar to all physicians and dentists. In the first place they are only slowly soluble in the saliva and both act as the best of mechanical cleansers before they dissolve. They are both alteratives, tending to restore the mucous membrane when it is abnormal, and each acts as a complement to the other. The *borate* gives a decided alkaline reaction with litmus paper, first it is strong of the soda, changing into a sweetish alkaline taste, which is very agreeable in effect. The meat packers of the United States alone use one thousand tons of borax yearly as an antiseptic. It is used in antiseptic surgery to quite an extent, being free from irritating properties, and is an efficient dressing for wounds, ulcers, abscesses, etc. Dr. Walb found that a five per cent solution of it would keep fibrin perfectly fresh for nineteen days. Its value in medicine grows out of these properties, in addition to its peculiarly detergent, mildly stimulating and alterative action upon the mucous membrane. In ulcerations, diphtheria, and other inflammations of the mouth, crystals of it are allowed to dissolve slowly in the saliva. In solution it is also largely used in skin diseases. The internal dose is from thirty to forty grains. *Potassium chlorate* and its medical properties are well known, it gives a neutral reaction with litmus, and will promptly change acid saliva to neutral. Like borax, when locally applied it is an alterative and stimulant to the mucous membrane, and is equally valuable for stomatitis and pharyngitis.

When taken internally it is continually eliminated with the saliva, coming in perpetual contact with the mucous membrane, thus continuing its beneficial work until entirely excreted by the kidneys. The internal dose is twenty to thirty grains. It is held by some to be an oxidizer and in this way to purify and disinfect the mouth and stomach.

Another reason for its selection is its saline taste, and its consequent stimulation to the flow of saliva; alkaline saliva seems an undoubted aid to digestion, and if it can be induced to flow and be kept alkaline, many stomach disorders will disappear. The two remedies act most beautifully together, each as a complement to the

other, without danger of overdosing. The mucous membrane becoming innured and hardened to the action of these remedies, would naturally offer greater resistance to disease. The materials being selected, they had now to be combined in the proper proportions to assist each other, and to produce the desired results; clinical test was the standard selected to decide these points, and the preparation is now used very efficiently in the following proportions: Pulverized cereal, 75 per cent; sodium borate, 17½ per cent; potassium chlorate, 7½ per cent. Orris and menthol to flavor and saccharin to sweeten. The flavoring and sweetening can be varied to suit taste.

It requires at least five grains at a time of any powder to be at all efficient in cleaning the mouth and teeth, and double the portion is better; in every five grains of the above formula there are one and one-quarter grains of the combined remedies; this is sufficient to keep the saliva decidedly alkaline for some time after using. Its preservative and antiseptic properties are shown from the fact that ten grains of the powder taken into the mouth and held until dissolved, then ejected into a test tube with a dram of saliva, remained pure and unchanged for forty days, the tube remaining unstoppered.

It seems apparent that with this prescription teeth can be cleaned without injury, and that decay may be arrested; a small portion or a tablet made of it, allowed to dissolve slowly in the mouth at frequent intervals would tend to arrest decay if not to prevent it. There seems little question but that caries might be prevented if it were practicable to keep the teeth constantly bathed in a fresh strong solution of the powder; if we assume this to be true, then the nearest approach that can be made to it the better for decaying teeth. Dr. E. S. Talbot, who has been prescribing it for months, claims it to be a most valuable adjunct in the treatment of pyorrhea, and my own observations coincide with his.

DISCUSSION. *Dr. Heise:* The saliva as a rule is said to be acid, and this acid condition is the cause of decay of the teeth; but I do not believe it. The cause of decay is not the acid condition of the saliva, but the presence of food which collects between the teeth and, owing to the presence of a germ, undergoes decomposition and generates lactic acid which causes breaking down of tooth.

In regard to the preparation that Dr. Fletcher recommends, I

most highly indorse it. In chemical abrasion which occurs near the cervical border I know of nothing better. We do not get that scratching and scouring away of soft dentin as with other powders, therefore I do not hesitate to recommend it.

Dr. H. T. Smith: Some experiments made recently in the chemical laboratories of the Harvard College on decay of the teeth showed that generally in mouths where decay was most active the saliva was mostly alkaline, which certainly goes to prove that an alkaline saliva does not make the teeth immune to caries, although alkaline is better than acid.

Dr. Taft: I have had a little experience with this material and have a very favorable impression of it. Taking into account its consistency I cannot see where anyone could find objection to its use.

Dr. Fletcher: The teeth are largely composed of the phosphate of lime, it is not probable that any alkalies taken into the mouth would act on any portions of the hard part of tooth. These points accepted as facts have made me believe that any kind of acid coming into contact with the teeth would have more or less effect upon them. If the saliva is very mild in acid reaction I believe it assists those acids which are constantly forming in the mouth to destroy the teeth, whether it be lactic acid or something else; I think Miller and others have decided that it is lactic acid which is largely to blame for the decaying of teeth.

My own test of the saliva of animals has shown that that of the grannivorous, those which eat grain entirely, have stronger alkaline saliva than those that eat flesh. Nevertheless all the animals I have tried, horses, cattle, sheep, etc., all gave a good strong alkaline reaction to litmus paper. These animals did not have decayed teeth from this condition. In reference to those teeth which are known to exist with no decay for a long time, and which are entirely devoid of enamel, I would like to read from letter of Dr. Williams: "The one experiment, and this I believe an accident, on which the opinion is based that decay of dentin may occur without the presence of acids, can hardly be regarded by bacteriologists as of much significance. Some teeth were placed in an agar culture of bacillus gangraene pulpae and put aside in a closet. Sixteen months afterwards they were discovered. The cementum was softened and discolored, and the dentin somewhat less so, with the dentinal tubules enlarged. The agar culture after having stood sixteen months gave

an alkaline reaction. There is nothing surprising about this, as several microorganisms which are known to be acid-producers would give an alkaline reaction after having stood in a culture medium for a much shorter time. There is at present no proof forthcoming that the culture was not at some period of its existence in an acid condition. But even if it should be demonstrated that any effect resembling caries of dentin can be produced in an alkaline medium, which I very seriously doubt, such a demonstration would not touch my position with reference to caries of enamel."

The editor of the *Cosmos* in commenting on this subject says: "No observer in this department of bacteriological research has shown that the fermentation of carbohydrates resulted in the formation of alkaline and products. On the other hand it has been demonstrated beyond reasonable doubt by Miller that the formation of lactic acid by the fermentation of carbohydrates through the agency of certain bacterial forms is the essential feature of the carious process in tooth-structure. Again, it is well known that dilute alkalies are without power to disintegrate tooth-structure, while it is equally well known that the action of even dilute lactic acid will bring about separation of the enamel prisms and, if long continued, disintegration of both enamel and dentin. These facts should be taken into consideration at their full value before it can be accepted as even probable 'that an acid is not essential to the carious process in the dentin.'"—*Ohio Jour., April 1900.*

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PUTRESCENT PULPS AND THEIR TREATMENT. By A. H. Peck, M.D., D.D.S.. Chicago. Read before Chicago Dental Society. The first thought that naturally presents is: What constitutes a state of putrescence; what changes in the parts involved are necessary that this condition may be brought about, and what elements are evolved and necessary to be destroyed? Gould says: "Putrescent, undergoing putrefaction." "Putrescence, the state or process of putrefaction." Thus before we can have a clear understanding of this condition we must look to the meaning of "putrefaction." In defining this term, he says: "The decomposition of nitrogenous organic matter under the influence of microörganisms and accompanied by the development of disagreeable odors due to the evolution of ammonia and hydrogen sulphid."

This is a good statement of the elementary facts, but Dunglison

gives us something better, more comprehensive. He says it is the "Decomposition experienced by animal substances when deprived of life and placed under special circumstances. Such change is now, in the light of modern research, considered as resulting from the action of pathogenic microörganisms. Presence of water is indispensable: the temperature most favorable to it is from 60° to 90° F. The most common products of putrefaction are water, carbonic acid, acetic acid, ammonia, carbureted hydrogen and a semiputrid substance which is volatilized and has an infected odor. State of becoming putrid."

Thus we have stated the majority of the elements, pathological and chemical, to be found in a state of putrescent pulp. But these are not all. How forcibly are we reminded of the fact that the conditions enumerated in Dunglison's definition are by no means the only ones, when we stop to consider that discolored teeth are almost invariably those whose canals have previously contained putrescent pulps, or those in connection with which abscesses have developed, and also if we are familiar with the chemical elements present, and the fact that they are continually uniting only to lose their individual identity, and that as a result of this evolutionary process are produced certain other elements of an entirely different nature, and which are directly responsible for the production of other undesirable results. It has been said that of all the metals, iron is no doubt most largely disseminated throughout the system. An excess of iron may be present in the blood of an individual; if so, the pulp of a tooth contains its proportionate excess of iron in the red blood globules. In a case of putrescent pulp the red blood corpuscles are broken up and the iron is set free; this, in combination with the sulphureted hydrogen, which is formed by the putrefactive process, forms sulphid of iron. Also in an individual who is suffering from ptyalism—systemic poisoning by mercury—sulphid of mercury may be found in a putrescent pulp, having been formed unto iron. And again there may be an excess of manganese in the system, in which case there may be found the sulphid of manganese in a putrescent pulp. The same might be said of lead and other poisons.

Thus you see there are many elements to be considered and to be gotten rid of in cases of putrescent pulps, aside from microörganisms and their poisonous products. It is not sufficient that we sim-

ply use a good germicide and a good deodorant if we would treat these cases intelligently and scientifically. We must understand the various properties of the drugs we use and be familiar with their ability to meet and destroy the many different elements present in these diseased conditions. We must be familiar with the fact that it is not good practice, from a scientific standpoint and also from a practical standpoint in most instances, to merely open into the pulp-chamber of a tooth containing a putrescent pulp and to dismiss the patient for a few days' time. Why? Because the opening permits the saliva and the air to enter the pulp-canal, carrying with them an excess of oxygen. It is a fact that an excess of oxygen present in connection with the sulphureted hydrogen and the oxygenated hemoglobin of the blood intensifies the reaction caused by a union of these elements, thus resulting in the formation of the real coloring material—the sulphomethemoglobin—in much less time and in larger quantities than is the case when an excess of oxygen is not present. This results in the rapid and ofttimes excessive discoloration of the teeth, one of the very important results to be avoided in the treatment of these conditions.

It is of the utmost importance that we appreciate fully the fact that the oxygenated medicines proper to be used in this connection, when intelligently used, are no doubt most efficient, producing most satisfactory results. No medicines should be used in these cases and remain any length of time, until the contents of the pulp canals have been as carefully and thoroughly removed as possible in most cases, by mechanical means. This done, I always have contended that the intelligent and conservative use of the oxygenated liquids, especially peroxid of hydrogen, pyrozone and hydrozone, constitutes a form of treatment which for thorough temporary cleansing cannot be excelled. We must understand that oxygen is one of our most valuable all-around agents. It is one of our best antiseptics, germicides, deodorants and bleachers. Any of you who have experimented with it in connection with the various preparations of iron and other metals likely to be found in putrescent pulps will surely agree that medicines containing oxygen, and that are proper to be used in this connection, should be given the preference.

I have used one agent in these cases as a deodorant with most gratifying results—meditrina. This is purified sea-water charged with electricity. This is a fairly good antiseptic; however, not so

potent as has been claimed for it, but it is an excellent deodorant. It is claimed that meditrina enters chemically into combination with the mephitic odors and gases and in this way effects their destruction. Whether this be true or not I am not prepared to state; but true it is, this agent has great affinity for these two products of the putrefactive process and very effectually destroys them. Cases in which it seems necessary to seal a deodorant for some time are of a very mean character if they will withstand the destructive effects of a thin creamy paste of beachwood creosote and iodoform.

In the general treatment of these cases our thoughts most naturally revert to a consideration of the essential oils. That we may intelligently use these agents it is not sufficient that we understand only their value as antiseptics, germicides, and their action on soft tissue. We must study them with a view of determining what other properties or elementary constituents they possess that will enable them to act successfully by destroying the various products of the putrefactive process, as well as the microörganisms and their poisonous products. In this connection I present the following general classification of the essential oils from a chemical standpoint: First, those composed of hydrocarbons only; second, those containing hydrocarbons mixed with oxygenated products, and, third, those containing sulphur compounds. A more exact division is the following: 1. Oils consisting chiefly of terpenes ($C_{10}H_{16}$), and oxidized products allied thereto; such as oil of turpentine, of lemon and of camphor. 2. Oils consisting chiefly of cedrenes ($C_{15}H_{24}$), and oxidized products allied thereto; such as oil of cedar, of cubebs and of cloves. 3. Oils consisting chiefly of aromatic aldehyds and allied bodies; such as oil of bitter almonds and of cinnamon. 4 Oils consisting chiefly of ethereal salts. These may be either (a) oxygen salts, as in wintergreen, or (b) sulphur salts, as in oil of mustard, oil of garlic.

The first division or terpenes, being allied to the hydrocarbons. are those composed chiefly of hydrogen and carbon. The second division are the cedrenes, which means a volatile liquid hydrocarbon found in the oils of this division. They also possess a camphor which is deposited, the formula of which is $C_{15}H_{26}O$. Thus the benefit of the action of the element oxygen is obtained. The third division are those consisting of aromatic aldehyds, meaning the presence of aroma in a class of compounds intermediate between

alcohols and acids, derived from their corresponding primary alcohols by the oxidation and removal of two atoms of hydrogen and converted into acids by the addition of an atom of oxygen. Remember that oils of cinnamon and cassia belong to this division. In the fourth division, or those containing ethereal salts, do we find oxygen as one of their elementary constituents, as the formula of ether is $(C_2H_5)O_2$. These are of course of the oxygen salts. The oils of this division which are of the sulphur salts, that are proper to be used in these treatment cases, may be employed to excellent advantage after the general debris of the putrefactive process has been thoroughly removed from the canals, as there is evolved from them a product of the sulphur series, which in combination with water forms an excellent bleaching and disinfecting agent. Thus it should be our aim, always, to use for general treatment purposes, in cases of putrescent pulps, those essential oils that belong to the oxygen series.—*Review, May, 1900.*

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GOLD AND GOLDBEATING. By G. H. C. Rowland, London. Pharmacists are interested in the familiar goldbeater's skin, and occasionally even yet the once common direction to roll pills in gold leaf is to be met. Goldbeating is of great antiquity, being referred to by Homer (1,200 B. C.) and Pliny (23–79 A. D.) The latter states that 1 ounce of gold was beaten to 750 leaves 3 inches square, about three times the thickness of the present average. Gold was largely used by Solomon, when a great deal of gold leaf was doubtless used for covering purposes. The art appears to have originated among Oriental tribes, and in India is still practiced under conditions involving many mysteries and great difficulties. On the coffins of the Theban mummies specimens of original leaf gilding occur where the leaves are so thin as to resemble modern gilding. The Incas of Peru appear only to have been able to reduce gold to plates which were nailed for ornamentation on the walls of their temples.

Fine gold is commonly supposed to be incapable of being reduced to thin leaves. This, however, is not so. Its use for ordinary purposes is undesirable because of the greater cost and the fact that leaves of pure gold tend to adhere to one another. It is preferred for outside work because it does not tarnish. The Albert Memorial in London and some other statues are covered with pure gold. The

fine gold is alloyed before using according to the color required. There are ten degrees of color—namely, red, pale red, extra deep, deep, citron, yellow, pale yellow, lemon, green or pale, and white. The proportions of alloy for the shades in common use are: For red. 18 grains copper to each ounce; pale gold, 5 dwt. silver; deep or medium, 12 grains copper and 12 grains silver. Pure gold is seldom required, and the same applies to double gold—that is, double the usual thickness. The deep or medium is that mostly used. The chief use of gold leaf is in the bookbinding and allied trades. Picture and mirror frame makers and gilders and decorators also use large quantities.

The first stage in goldbeating is to melt the gold in an earthenware crucible with the requisite amount of alloy, at a temperature higher than the fusing point, so as to increase its malleability. This is then cast into an ingot 3 inches long and 1¼ inches broad. When cool the ingot is rolled between powerful steel rollers, which are gradually tightened. After it has passed through half a dozen times it requires to be annealed. It is then passed through the rollers twice and again annealed. and this is repeated six times. The ingot of 3 inches has at the end of this operation become a ribbon 20 yards long and about the thickness of ordinary note paper. The width remains the same, as extension takes place only in one direction. This ribbon is divided into two 10-yard lengths, each weighing about 3 ounces, and constituting a "piece" of work for one man.

The beater marks off the piece, and with a pair of shears divides it into 180 smaller pieces. Each of these is placed separately into a tool called a "crutch," with a piece of skin or membrane about 3 inches square between each, and the whole is inclosed in two membranous bands. This is placed on a block and beaten for half an hour with a wooden hammer weighing about 17 pounds, the labor being considerably reduced by the elasticity of the skin causing the hammer to rebound. At the end of this time each piece of gold foil, originally about 1 inch square, will have extended to the edges of the membranes, and is taken out leaf by leaf and each quartered so as to give 720 pieces.

Each of these 720 is placed in a tool called a "shoder," which is similar to the cutch, but the skins are considerably finer and 4 inches square. This is hammered for about two hours, until the

gold again reaches the edge of the skins. The leaves are taken out and again quartered, giving 2,880 pieces. The next tool is called a "mould," and is made up of the finest skins. A full mould contains 950 skins 5 inches square, so that three such tools are required for the 2,880 leaves resulting from the previous operations.

The skins or membranes which comprise the mould are about double the thickness of the goldbeater's skin as met with in pharmacies. Like the previous tools, they are prepared in France from the outer coat of the cecum or blind gut of the ox, the gut of 380 oxen being required to furnish sufficient skins for one mould. The gut is first stripped off in lengths of 25 to 30 inches, freed from fat by dipping in caustic potash solution and scraping with a dull knife, and stretched on a frame. Two membranes are glued together, treated with a solution of aromatic substances or camphor in isinglass, and coated with yelk of egg. The price of a mould is sometimes as high as $100. It will stand years of beating before being relegated to the pharmacist to be cut up and sold as goldbeater's skin. Many substitutes have been tried for this gut, but none has been found successful.

The beating of the gold in the mould occupies five hours, and this is the most difficult stage in the process, the thinness of the gold leaf depending on the fineness of the skins and the judgment of the workman. At the end of two hours, when the gold is about $\frac{1}{150000}$ part of an inch in thickness, it permits the passage of a ray of light for the first time, the transmitted light being green, or if much silver be present, violet. Some leaves when heated transmit ruby-red light. For some time at the commencement of the beating the blows are necessarily struck in the center of the skins. This produces heat, which tends to curl up the skins, as a hot iron does in plaster spreading. This must be carefully guarded against and occasionally the beating must be suspended for a time. As the leaves extend in size the beating is more generally distributed and this lessens the danger of heating. At the end of five hours the leaves are taken out, and each is cut on a cushion with an instrument called a wagon, the cutting edges of which are simply split rattan canes. The usual size is about $3\frac{1}{4}$ inches square. The leaves are now ready for putting up in the tissue paper books. The leaves of the books are previously dusted with rouge to prevent the gold sticking to the pages. Transfer gold, which is used for out-

door work, is simply ordinary gold leaf pressed on to sheets of tissue paper so as to adhere, but readily coming away when pressed on to a varnished surface, thus enabling outdoor work to be carried on even in windy weather.

Between each time of using every membrane of the mould requires to be separately cleaned, each side being brushed with talc by means of a hare's foot. It is afterwards put in a hot press to remove damp. The degree of dryness is very important. If the membranes are not sufficiently dry the leaves of gold do not extend evenly, and overdryness diminishes the brilliancy of the gold.

The limit to which gold has been beaten in the manner described is 1 grain to 75 square inches. Taking the cubic inch of gold as 4,900 grains, this gold leaf is $\frac{1}{367500}$ part of an inch in thickness, or about 1,200 times thinner than ordinary writing paper. One grain of silver has been beaten to 98 square inches, but owing to difference in specific gravity the leaf was thicker than the gold leaf. This experiment does not determine the malleability of either metal, as the means of testing it failed before there was any appearance of the limit of malleability of the metals being reached. In practice gold is not nearly reduced to such a degree of thinness as the above.

Many attempts have been made to beat gold by machinery, but without success. The practiced eye and the skilled hand seem indispensable.—*Pharmaceutical Journal.*

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SEPTIC ACCIDENTS CAUSED BY ERUPTION OF THE THIRD MOLAR. By Dr. M. C. Aparicio, City of Mexico, Mex. August 8, 1899, Mr. J., twenty-four years of age, came to me. The young man had scrofulous antecedents and explained that about two years ago he experienced some syphilitic manifestations which caused ganglions on the neck leading almost to suppuration and the alteration of various organs.

He was attended by a physician who within six months made his ailments completely disappear, but shortly afterward the patient was attacked by a violent and acute pain in the trifacial region. In the course of time his sufferings increased to such an extent that there was a period during which he lived only by strong narcotics. In this way the patient passed more than ten months, until he began to experience some trouble in his mouth ; he felt the gum enlarged to the level of the middle part of the ascending arch of the right

lower jaw. The growth felt by the patient had produced considerable inflammatory phenomena, impeding as they did the passage of aliments, which consisted of liquids only and in small quantities.

About five or six months ago the patient saw appear all over his body an eruption accompanied by quite high fever, so he consulted a physician. To corroborate the diagnosis made, this one had to call in another physician in order to agree by consultation upon a method or mode of treatment. This was done accordingly, the physicians telling him that the blotches on his body were caused by an intestinal affection, and that with the remedy proposed the evil would disappear. Lack of means prevented the patient from procuring this medicine. His affection or disease did not disappear, and in a fit of despair he came to me as a last resort, prepared, as he expressed himself, to suffer death if I could not relieve him. The gravity of the case, and the short time in which I had to combat the disease, made me hesitate, but from motives of hnmanity solely I finally resolved to act.

The general state of the patient was an extreme weakness; his temperature rose to thirty-nine degrees; the whole body was covered with a septic eruption; there was a submaxillary adenitis, contraction of the muscles of the face and neck of the diseased region; a very bad odor from the mouth, the mucous membrane in septic condition, and a very severe pain in the trifacial region. These symptoms were not sufficient to determine what was to be done. I therefore decided to make a more thorough examination, for which purpose I chloroformed him and proceeded. I opened the mouth with an instrument, it being done with considerable difficulty, for there was not only the impediment of the muscular contraction, but also profound adhesions of the cheek with the jaws, which I had to break, making use of a straight bistoury. The operation had to be frequently interrupted in order to empty the mouth, which was filled with great quantities of pus mixed with blood.

The loosening being concluded, I applied an antiseptic wash and afterwards commenced reconnoitering with a lancet which I had to force, lacerating the tissues, in order to come to seat of the lesion. With great difficulty I finally succeeded in touching the crown of the third molar that was impacted obliquely in the middle part of the ascending arch of the jaw, and at a level with the articulation. Between it and the second molar there was a portion of necrosed bone

measuring one centimeter more or less, precisely in the surface of the alveolar ridge. On a level with the anterior pilar of the isthmus of the throat there was a fistulous trajectory. In order to increase the field of operation I extracted the second molar, with the intention of doing the same with the third by means of a bayonet-shaped forceps. But the extraction of this tooth proved very difficult even with the help of other instruments, due to the fact that my finger was the only probe I could use, and therefore the only one indicating the existence and situation of the tooth. Finally, after laborious work, and making use of some special elevators, the molar came out, presenting nothing abnormal, although its roots were large and convergent. Immediately after the extraction I proceeded to verify the extent of the necrosed bone, and then applied an antiseptic dressing suitable for the case. Three days after this operation the patient came to my office, telling me that although he was not entirely well he was greatly improved, as he experienced much less trouble, so that he could rest with some comfort. The patient was subjected to a rigorous antiseptic treatment lasting two weeks, I personally curing him. The internal treatment consisted of tonics and potassium iodid.

From this time I could readily note the disappearance of the disease and its complications, for day after day the blotches disappeared, having been caused by the septic eruption which covered the body of the patient. At present the evil has nearly abated, the patient being in an advanced state of improvement, recovering rapidly, so that he can attend to his work.—*Items, May, 1900.*

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SAFETY GOLD CROWN. By H. G. Maize, D.D.S., Germantown, Pa. Bicuspids or molars when in the condition that require crowning are generally dead teeth: ofttimes the roots are diseased and in such condition that it is only a matter of time until the tooth must be opened and treated.

About two years ago I had a case of a lower left second molar, first and third molars being out, leaving the second the mainstay in mastication. The tooth was very large and had large, straight canals, which were filled nicely with gutta-percha, the rest of tooth being filled with cement, but most of it had broken away with the anterior lingual and distal walls, leaving nothing to build on except the buccal wall.

I saw the only way to save the remaining part of tooth was to

crown it, but it had to be done in such a way that, if the tooth gave trouble, it could be opened without removing the crown. After treating tooth for some time, the canals were filled with a combination of aristol, beechwood creosote and paraffin, filling the pulp-chamber with gutta-percha, and building a column of it to the surface of the tooth, then building up and around gutta-percha with cement. Made a band and swaged a cusp in the usual way, but before flowing cusp, pushed a hole in it right over the column of gutta-percha, using an instrument shaped like a pencil point, making an opening with flanges on the under side of cusp; then flowed and soldered to band. A disk to fit opening in cusp was then made.

A piece of 36-24 K. gold was burnished perfectly to edges of opening, removed, carefully placed on a piece of charcoal and flowed full of 22 K. gold, making a solid disk perfectly fitting the parts. A cone was then made of a piece of platinum wire of suitable thickness, soldered to under side of disk, making an inverted cone connection to disk. The crown was cemented to place, all cement removed from opening, leaving gutta-percha column directly underneath. After drying parts thoroughly, the disk was heated to almost redness and pressed to place, making a complete crown with a removable disk directly over the pulp chamber. When the disk is to be removed, take a suitable sized burnisher, heat thoroughly, place it over disk, which is a good conductor and soon softens the gutta-percha, after which it is easy to remove disk; take out gutta-percha and we have free access to canals.—*Items, May, 1900.*

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MODIFIED WIRE CLASP. By Dr. F. L. Bogue. Read before the New York Institute of Stomatology, Feb. 1900. I think it would not be amiss to call attention to the ordinary wire clasp, which is not in general use. Although working independently, the forms of clasp devised by various men are almost identical. The gauge of the wire used in these clasps is from nineteen to twenty-one, depending upon the relative degree of rigidity or elasticity required. Some of the advantages of these clasps are: lightness combined with strength; great elasticity; can be easily bent to fit teeth of any shape, especially convex teeth, the lower wire fitting under the tuberosity, the upper wire above it; minimum contact with the surface of the tooth, which is an advantage because a tooth bearing a clasp is injured not only by mechanical abrasion, but by the

chemical decomposition of the *debris* held in contact with the tooth by the clasp.

The modification I wish to present this evening was designed for a case in which the back tooth tipped forward, forming a space which was largest at the gum margin. The idea was to make a fixture easily inserted and removed, and yet one that would fit the teeth when in position. The clasp for the back tooth was made and attached to the plate, as though no undercut existed. The standard for the forward clasp was soldered the thickness of the clasp wire back of the front edge of the plate. This is done in order that the plate might extend as far forward as possible without having the clasp wire interfere. The upper end of the standard was bent forward almost at a right angle, in such a way that when the upper wire was soldered to the front of the bent end of the standard, the wire would be in contact with the tooth. The object of bending the standard in that way was to prevent the fixture from being driven forward during the act of mastication. The forward clasp, which was shaped like a hairpin, was fitted to the tooth. The upper wire was soldered to the standard; the lower wire, being left free and fitting the neck of the tooth, was brought far enough around to be accessible from the front. When it is desired to remove the fixture, the lower wire is pressed back against the standard and the plate lifted up from the front end.—*International, May, 1900.*

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TO REMOVE BLOOD FROM THE CLOTHING. By J. T. Rugh, M.D. Several years ago while contemplating the removal of a large bloodspot from my clothes, I recalled the action of hydrogen peroxid upon albuminous substances during operations, so immediately applied it to the spot in question, and was delighted to see the stain entirely removed. Since then I have used it many times and always with the same results. The earlier the peroxid is applied after the bloodspot is received the better the effects, but I have used it on spots over a week old, and they were completely erased. It should be used full strength, and after oxidation has ceased should be wiped off and another application made. Several such trials may be necessary before the stain disappears, but the process can be hastened by rubbing with the finger or a cloth while oxidation is in progress. If hot water has been used, or anything which will coagulate the albumin, the peroxid will not remove the

stain, but otherwise its action is all that could be desired. I have frequently removed spots from my shirt front, collars and cuffs, and after the place dried there was no evidence of any soiling having occurred. Quite recently I removed a very large stain from the carpet, following an operation in my office. I have never seen clothing bleached by the peroxid during removal of spots.—*Phila. Med. Jour.*

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PROSTHETIC RESTORATION OF AN AMPUTATED TONGUE. By G. B. Terrell, Yonkers, N. Y. Read before the New York Chapter of the Psi Omega Dental Fraternity, Jan. 26, 1900. The patient was a man of more than ordinary ability, and could write and converse in seven or eight different languages. He knew how to appreciate everything that was done for him, and greatly aided the experiments by his patience and faith in their outcome. As he begins the history himself, he noticed a smarting sensation at the frenum of the tongue, and upon examination discovered a small ulcer or pimple, as he expressed it. He had been an inveterate smoker, smoking twenty or thirty cigars a day, and immediately upon discovering the pimple he felt a fear of cancer. He applied at a near-by drug store, where the druggist cauterized the pimple with a stick of nitrate of silver. The soreness continuing, the patient applied the caustic himself; and then becoming more alarmed, went to the surgeon of a hospital in St. Paul. At the hospital a piece of the unhealthy tissue was removed and examined by a microscopist, who diagnosed it as epithelioma. An operation was held out to the patient as the only possible means of saving his life, and he therefore submitted himself to the surgeon's knife.

The operation, which took place about Sept. 15, 1898, was performed by dividing the inferior maxilla at the symphysis, the bones were pressed aside, the muscles divided, thereby getting to all of the affected parts, and about two-thirds of the tongue, or to the circumvallate papillæ, cut off, taking out some of the soft tissue under the tongue, making a deep depression between the stump and the lower teeth. In sectioning the jaw the surgeons cut out the bone the width of the central incisors, taking the teeth away with it. Why this was done I do not know. After the operation the cut ends of bone were brought together and fastened with silver wire. The soft tissues healed nicely, but the bones failed to unite. The

silver wires, together with the mobility of the severed parts, caused an irritation which developed abscesses, one of which opened under his chin and the other inside his mouth. The silver wire was then taken out and the jaw left to take care of itself, a fibrous union being the result.

After stopping at the hospital about three months, during which time he subsisted on liquid and soft foods, he came to New York City with the hope that something might be done for him. Prof. Weisse presented him at the Thursday clinic of the New York College of Dentistry about December 15, 1898. It came my turn to take this patient, and I made an appointment to take an impression of his jaw. He came at the appointed time, but he did not then take an impression. I never realized before the real use of the tongue as a swab for keeping the buccal cavity clean. In the roof, cheeks, gums and teeth was a thick deposit of mucus, pus, tobacco stain, and decaying matter such as I had never seen before. In the depression of the floor of his mouth was also this abscess sending out its thick, yellow pus. It took three sittings to get his mouth into even fair condition for taking an impression, and I used plenty of one per cent solution of formalin while doing it. He had been eating soft food for the last three months, and no one had even told him to swab out his mouth with a piece of cotton or sponge. The patient always had a feeling of nausea since the operation, and had fainted several times because of the nasty condition of his mouth, though he had used as mouth-washes creolin, peroxid and permanganate of potassium. After I cleaned his mouth he continued to improve in health.

Upon examining his jaw I found that the sawed surfaces rocked so that when his mouth was opened the teeth came together in the median line, and when the mouth was shut the teeth were separated as much as three-sixteenths of an inch. I concluded to make a cap splint, as it would allow the mouth to be opened and the abscess treated. I therefore took an impression of his lower jaw in plaster the usual way, and made my splint of block tin. I then took an impression of his chin, made a model of a chin cap or cup, making it as light and airy as possible, and duplicated it in block tin also. I then bent two pieces of round wire, a piece for each corner of the mouth, and fastened by a screw one end of each to the splint, then passing them out at the corners of the mouth bent them down the chin, and

then under where the other ends were tapped and threaded to hold a machine screw which impinged against the under side of the chin cup, thus making his jaw fixed as if placed in a vice. The chin cup was lined with lint, and he kept his chin smeared with vaselin to prevent chapping from the saliva which flowed out of his mouth. The patient declared the apparatus felt very comfortable. The surgeons at the hospital in Long Island City, where he was stopping at this time, were skeptical as to a union taking place, but in seven weeks' time the patient took the splint out and we found a perfect union.

While working on the splint it occurred to me that some kind of an apparatus might be put into his mouth that would at least enable him to eat something beside soft food. He had a continual longing for a piece of meat to chew upon. He could not chew anything, as he had no tongue with which to keep the food between his teeth, and it fell into the depression in front of the stump of tongue, from which it had to be washed out by drinking. I felt quite certain that we could make something that would help him to eat, and while experimenting with him other satisfactory results were developed. The patient was more than willing to be experimented with, though I told him not to expect too much. As a preliminary experiment I simply modeled a piece of modeling compound to fit in the depression between the stump and the teeth, and level with the top of the teeth and dorsum of the tongue. Although it fitted in loosely, the patient could talk a little better with it. I then pictured in my mind about the kind of an apparatus I would make, and though I first tried several other experiments, I came back to the original idea. I will tell you some of the ways I tried first.

I first took a model of the lower jaw and teeth in zinc, then swaged a piece of German silver to fit around the inside of the teeth from the last molar on one side to the last molar on the other, reaching from the gingival margins to the cutting-edges of the teeth, and bending over several little lugs to fit in the sulci of the morsal edges to prevent the rim from cutting down into the gums. I then soldered a gold clasp on each last molar and the first bicuspid on the right side, and next a round platinoid wire across the heel of the rim from molar to molar. Then swaged another piece to fit inside of the first piece, and holding them together, bored and tapped to hold small screws. Next spread a piece of rubber-dam

over this frame, tucking the edges between the two rims, the screws holding it all in place. Then a little trigger was made to swing on the round wire in the back, the back part of which was beveled under to fit against the stump of tongue, and a long piece to project out under the rubber-dam, the purpose being that, the rubber forming a floor for the mouth, the stump of tongue in moving would push the beveled end of the trigger, which would swing on the wire, and pushing up the long end against the rubber would cause it to bag up and throw the food between the teeth, where the buccinator muscles would take care of it on the other side. This arrangement did not prove satisfactory, as the food packed up on the rubber; the rubber was offensive, and there was a feeling to the patient of something wanting.

In my next experiment I took the trigger and rubber-dam out and filled in the whole frame from the tongue to the teeth in front with modeling compound, flattening it toward the back, but rounding it up in the middle with sloping side toward the morsal edges of the teeth. The object was that the food might continually slide in between the teeth while being chewed upon, but this is what it did not do. The food packed between the mound and the roof of the mouth, and the voice was very much muffled.

My next and last experiment was to take the outer rim which I had swaged, and as it was very irregular on account of its following the lines of the teeth, I tacked against it with solder a strip of thin platinum plate, making a perpendicular walled box on the inside. Then filled in between these two pieces with solder, making a rim of solid metal with the top edge even with the top of the teeth. I now modeled out of modeling compound a tongue to fit inside this walled rim with a thin flange projecting from the tongue and resting all around the top edge of the rim, making it nearly flat on top, and toward the back making a gully as a sort of director for grinding the food into the esophagus. The back end of the tongue was made thick and beveled under, so as to fit the stump. The compound was molded around the wire in the back, so that any movement of the stump imparted motion to the artificial tongue, causing the end to tip up. After getting the proper shape of a tongue in modeling compound, I duplicated it in block tin, which I found to be too heavy. It was so heavy that it tired the patient's stump of tongue. I then made one of red vulcanite, weighting it

near the thick back end. The last thing was to attach two molars to the rim on the right side to replace two of his own that had been lost, and the artificial tongue was completed.

The motions of the muscles against the tongue kept it in motion, causing a constant agitation of the food, and throwing it back into the esophagus. The buccinator muscle of course prevented the food from lodging between the cheeks and teeth, and as an eating-machine it proved very satisfactory. I can very well remember his pleasure at having eaten his first piece of meat. While talking the tongue bobbed up and down, and it certainly made his enunciation much plainer; and though I wished it might be better, he felt quite satisfied, and said he did not feel dressed without it, and he never cared to talk to strangers without his tongue in place. Last, but not least, was the comfortable feeling it gave to his mouth. He said, "You have no idea the rest it gives to my mouth; it seems to fill a void left by the amputation. If for no other reason, I would wear it in my mouth for that."

The patient was intending to have one made in gold and red vulcanite after the pattern of the one just experimented with, and upon which I intended to improve a little in fastening the tongue to the frame, and some other minor things, but the recurrence of cancer showed itself in enlarged glands of the neck, and he underwent an operation from which he died Dec., 1899.—*Cosmos*, April, 1900.

* * *

BEST MATERIAL FOR FILLING CHILDREN'S TEETH. By J. Leon Williams, London. The first question that arises in connection with this important matter is, "Why should there be any difference between the material used for filling children's teeth and that provided for adults? The answer, in general terms, is that the tissues forming the teeth of children for a number of years after their eruption differ from those of adults, inasmuch as they are in an undeveloped condition. The normal development of dentin, even at the time when the exterior formation of the teeth is completed, is in an imperfect condition, the pulp occupies a larger proportion of the internal body than at a later period, and the tubules have a larger diameter and contain a greater quantity of organic matter. This period of imperfect development is a well-known fact, though its limits have not been actually and certainly defined by careful observers. There is another consideration also which it is neces-

sary to remember; that in the histology of dental tissues it is recognized that a slight irritation, such as might be caused by the constant attrition of opposing teeth, is felt through the whole mass of the dentin, and has the effect of exciting the adontoblastic cells to renewed vitality, and the formation of secondary dentin. If this irritation is greater it will inevitably result in the destruction not only of the contents of the tubules, but of the pulp itself. There is a probability of this irritation being most violent during the years between eleven and twenty, so that it is imperative during this time to avoid all irritants which may act destructively on the dentin, and so endanger the life of the teeth.

But taking this as a general rule, a variety of considerations must guide the operator in his choice of a proper filling material. The age of the child, its temperament, the condition of its health, its sex; the size, condition and location of the cavity, and the characteristics of the decay—all these must be borne in mind. At first sight it may not be apparent why these circumstances should affect the choice of a filling material, but on consideration it will at once become clear that they all have an intimate bearing on the subject. It is too often the case that very little discretion is exercised, and that the teeth of childhood and youth are filled with the same materials and by the same methods that would be used in adult life. In other words, a system of mere routine is followed, the effects of which are shown by the general failure of the fillings inserted in childhood. It is impossible to make a hard-and-fast rule which shall apply in every case during the years from the appearance of the first permanent incisors to the time of puberty, and each case must be judged on its own merits, even when we apply the considerations enumerated above. There are certain things which would be eminently suitable for a child of thirteen or fourteen, but absolutely wrong in the case of one of seven or eight years of age. This stands to reason, if only because the development of the teeth at the latter age is a long way behind those at the former.

With these considerations well understood, we may proceed to the actual matter under discussion. A writer, in speaking of the irritation which we mentioned, continues as follows: "It is therefore imperative to avoid all materials which will produce this irritation. Hence all of those which act as good conductors of thermal influence must be excluded, such as gold, amalgam, or even the phos-

phate cements. This narrows down the list. Thermal action, if slight, may be productive of good in creating an increased vital action, producing an increased nutrition in dentin, greater density, and consequently more power of resistance ; but this unfortunately is very exceptional. The general result is that irritation upon hyperesthetic tissue is persistent and invariably ends in pathological conditions." He then notes that under these conditions the list is limited to two suitable filling agents—tin and gutta-percha. The former is a poor conductor and if used with perfect science is a reliable filling. The color is objectionable, but as the object of the operator is to save teeth till age produces an increased density, this is not a very formidable matter. Gutta-percha is preferable and makes admirable fillings, though they will require renewal.

Oxyphosphate or oxychlorid of zinc is not to be altogether depended upon, for it may have an injurious effect upon the sensitive tissues of young teeth. There is, however, one fact in its favor, which may induce some workers to give it precedence over the others mentioned, and that is, the ease with which it can be inserted, without the necessity of the patient undergoing any very great pain. This is an important consideration, because if a child suffers great pain the probability is that he will avoid the dentist for the future as much as possible, and his teeth will be neglected. On the other hand, if the operation be painless, or nearly so, the child's confidence is retained, and at a later period there will be no difficulty in putting in a more permanent filling.

It must not, however, be forgotten, in considering the most suitable filling for children's teeth, that although gold is contraindicated as a rule. it still has its supporters under certain conditions. But in general it may be taken as being unsuitable. Writing on this subject Dr. Wedelstaedt exemplified the use of gold in filling children's teeth by a comparison; the substance of which was as follows: Two children are brought to the dentist, a boy and a girl. The boy is ten years of age, sturdy, strong and eager ; he has roses in his cheeks, his eye is bright, and he shows every sign of health. His sister, who is twelve years of age, is the very opposite of the boy. The cavities in their teeth are practically the same. In the case of the boy, having studied the cavities carefully, the decision would be to use gold fillings, with the hope and expectation that they would be permanent. For the girl, whose general health and

physical condition are in a very inferior condition, the filling would also be gold, but there would be the certainty that within five years she would return with linguo-gingival decay around the margins of her fillings. In the case of the girl it does not appear at all clear why gold should have been used, for in its results it has no advantage over any other filling, and may have acted injuriously instead.

On the whole it may therefore be laid down as a truth that the use of gold in filling children's teeth, when used at all, must depend largely on the temperament of the patient; it must be a question of physical and mental stamina. Some children at a given age exhibit twice the amount of moral courage and physical capacity for the endurance of an operation that is seen in others of the same age. This is a phase of the subject that should be carefully estimated and studied by the dentist, and the gold filling should be postponed until it is quite certain that the patient is well able to stand the wear and exhaustion of the operation. As a general axiom it may be stated that until such time as the anatomical changes which are natural between the periods of childhood and puberty have occurred, it will be wise to discard gold in favor of some other suitable filling such as we have mentioned, unless there should be some special reason for its use, always remembering the apophthegm of a well-known writer on this subject—"In proportion as teeth need saving, gold is the worst material to use."—*Brit. Dent. Jour., May, 1900.*

* * *

PREVENTION OF DENTAL DISEASES. By J. Leon Williams, London. Treatment for the prevention of decay of the teeth and other oral diseases is not receiving that attention from the dental profession which the results of the latest scientific research in this direction demands. With the complete demonstration that the sole immediate cause of dental caries is acid-forming bacteria, which are always to be found in the mouth, the possibility of preventing decay of the teeth became apparent. Theoretically it seemed evident that this great boon might be conferred on humanity at once, but practically there are still difficulties in the way of its realization. I have several times called attention to the important fact, now well known to all bacteriologists, that several forms of bacteria found in the human mouth produce acid when grown upon certain culture media, but give no acid reaction when cultivated on other media. This fact is undoubtedly related to the heretofore mysterious phe-

nomenon of rapid decay in some mouths and an almost complete immunity in others. The great variation observed in this respect is not due to differences, either of tooth structure or of the condition of the general health. Nor is it due to food habit as has so often been claimed. Recent inquiries in this direction have made it evident that while food habits constitute a factor in the problem of dental caries, yet they are not of primary importance. Certain members of a family which have the same food habits will have rapid decay of the teeth, while other members of the same family are comparatively immune. Certain people may eat freely food containing starch and sugar in various combinations and still show but little dental decay, while others who have eliminated sugar from their diet to the greatest possible extent suffer from rapid decay. It is furthermore a matter of common observation that life-long invalids have good teeth, while many who have always enjoyed robust general health find it necessary to frequently visit the dentist to save their teeth from decay. Investigation is making it more and more clear that while all of the conditions above-mentioned, the structure of the tooth—especially the enamel—the food habits of the individual, the conditions of the general health, constitute factors in the problem of dental decay; yet the most important cause of all is not to be found in any or all of these conditions. This important factor is some state of the fluids of the mouth—chiefly the mucous, as I believe. I am growing more and more to look upon the condition of the mucous membrane as intimately associated with the health or disease of the teeth. Vitality is the great germicide, and local vitality in the mouth, especially the vital condition of the mucous membrane, is in my judgment the prime factor in this great problem of decay of the teeth, so far as predisposition is concerned. By vitality we mean simply the *ensemble* of all the physical, chemical and physiological conditions which make for perfect health.

The dental disease which we and our patients dread most of all—the disease which terminates in the loosening and ultimate loss of the teeth—starts, I believe, in the mucous membrane. It begins as a lack of vital tone in the soft tissues immediately surrounding the tooth; may be nervous or vascular in its inception; and probably arises as some slight defect in the functioning of the vaso-motor nerve terminations. This results in lack of muscular tone in the walls of the blood-vessels and secretions so altered as to produce

various phases in the activity of the pathogenic bacteria of the mouth. Tissues which have lost vital tone are not only more easily attacked by bacteria, but it is also probably true that a depressed condition of the vitality of the tissues with which bacteria are in immediate contact modifies unfavorably the action of these micro-organisms upon the tissues. Certain abnormal conditions resulting from lowered vitality may favor the pathogenic action of bacteria especially concerned in the loosening of the teeth, and other conditions may so modify the action of other forms of bacteria as to result in the rapid production of the acid which causes decay.

The results of the past five years' scientific study and experiment, and close observation of almost every abnormal condition of the mouth, have convinced me that much more can be done than is being done to maintain a healthy condition of the mouth and prevent both loosening and decay of the teeth. First of all our patients must be impressed with the fact that our success in treatment for the prevention of dental disease must be very largely due to their cordial and persistent cooperation with our efforts. In cases where this can be secured, where our instructions are faithfully carried out, the results are very gratifying. With the knowledge now in our possession as to the causes of dental caries and the means for treating it, *decay of the teeth can be largely prevented.*

I have several times pointed out in this connection that those substances which are the most efficient germicides in laboratory experiments are not necessarily the best agents to use in the mouth for prevention of decay of the teeth. Carbolic acid, for instance, which is so extensively used in tooth powders and dentifrices, is one of the least efficient and desirable germicides to use for this purpose. The thing desired is such a combination as will act *most beneficially upon the mucous membrane* and *most destructively upon the pathogenic bacteria at the same time.* Experiment alone will give us the necessary data for determining this. At present the preparation of antiseptic washes and dentifrices is in the hands of those who have no expert knowledge of what is required. Most manufacturers of these articles are not even in touch with those entitled to speak upon the subject. This does not deter them from making use of the results of scientific research for advertising purposes, and often the exact language used in stating such results appears in unexpected places.—*Brit. Dent. Jour., March, 1900.*

The Dental Digest.

PUBLISHED THE TWENTY-EIGHTH DAY OF EVERY MONTH
At 2231 Prairie Avenue, Chicago,
Where All Communications Should be Addressed.

Editorial.

THE DENTAL DIGEST AND ITS DETRACTORS.

Since the organization of the Dental Protective Association, and the publication of the DENTAL DIGEST as its official organ, it has been our fortune—good or bad—to have raised considerable opposition. In view of our object, which was to liberate the dental profession from an irksome sort of bondage, this was to have been expected, particularly from those whose nefarious practices we were pledged to combat. We looked for it, in fact we should have been disappointed and have felt that our mission was turning out amiss if it had not raised this sort of thing.

What we did not expect, however, was a certain undercurrent of opposition from those in whose interests we were really working and who should have been the foremost in lending aid. It is this that has surprised and hurt us—not because we were personally affected by it, but because of the injury to the cause for which we were contending.

We think much of this abuse has been due to misapprehension and misunderstanding by those taking part in it—at least we are disposed to be generous enough to give them the benefit of the doubt. Now, however, we wish to bring the matter fairly and candidly to the front and then let the profession judge as to the merits of our policy.

We have been charged with not keeping the membership of the Association sufficiently informed as to its internal workings. Must it not be clear to all thinking men that the surest way to arm an enemy is to give him information as to the acts and intentions of his opponent? Is it possible that the profession does not well enough know the character of its foes, to be assured that every jot or tittle of information published in this journal would be seized on by these enemies and used to their advantage? These cases should be tried in the courts and not in public journals, and we have been

simply safeguarding the interests of the Association when we have avoided issues of this character in our pages.

It has also been charged that we personally have become suspicious and supersensitive, and that we fly at the throats of our friends (!) on the slightest provocation. Well, we ask in all calmness and fairness, if years of fighting against as crafty and unconscionable foes as ever menaced the welfare of any profession—foes who stop at nothing mean, cowardly, underhanded or dishonest to further their ends, who would employ bribes or blackmail or perjured evidence to win their point against the profession; whose methods are such that it has been a question of eternal vigilance to checkmate them and frustrate their dangerous designs—we ask, whether this kind of an experience is not calculated to raise some little suspicion? If we had not been suspicious and watchful our cause would long ago have been lost. And on top of this, is it not enough to create a double suspicion when we find those whose interests should have been the Association's interests, and who should have stood by the profession through thick and thin, selling themselves, their influence, and even their journals, to further the interests of the enemy? If we are unduly suspicious we have been rendered so by the despicable conduct and culpability of those who should have aided instead of trying to undermine the reform work.

A further and graver charge is that we have misused the funds of the Association, have spent them foolishly, and even have stolen them. It must be understood by every intelligent practitioner that such attacks on us personally are made by the profession's enemies to lessen confidence in us and our work simply and solely. No subsidized editor, supply house or emissary of the Crown Co. has ever or will ever dare to make a specific charge against our honesty. The fact that the leading men in the profession have every confidence in us, and also that within the past two months the state dental societies of Illinois, New York, Connecticut, Kentucky, Michigan, Massachusetts, Indiana and North Dakota have passed the strongest kind of resolutions, expressing absolute faith in our integrity and ability, urging us to continue with the work, and rebuking those who seek to break up the Protective Association—all this should reassure any misinformed brother who may possibly have been led astray by his false friends.

The day will come when all the petty meanness we have been sub-

jected to—as well as the authors of it—will see the light, but for the present we must bide our time and devote our entire energy to the one object in view, namely, the suppression of the octopus which to-day hangs over the profession. And in this connection we must state once and for all, that we have no time to further notice the puerile personalities that are from time to time aimed at us by these small-minded and jealous individuals, who would serve their own interests and their future reputation to better advantage by tendering to our cause their loyal support.

We do not intend to be diverted from our main purpose by paying any further attention to petty gibes or insults, and we merely ask the profession to wait the ultimate issue of the present various contests before they pass judgment on our policy. We are entirely willing to stand or fall on the result.

"WHAT WILL THE POLICY BE?"

We publish in this issue an article with the above heading by the late Dr. Menges. He had intended this for publication in the June DIGEST, so as to appear a few days before the meeting of the Faculties' Association, and in compliance with his wishes expressed some two or three weeks before his sudden demise, we publish the article this month. It contains many strong and even radical statements, but we do not think they will be contradicted by any college men in the country. Coming from a well-known educator, and the secretary of one of the largest dental institutions in the United States, the article carries additional weight, for the criticism of the Faculties' Association in this case comes from one who was closely connected with it, and not from an outside source.

As Dr. Menges has said, the National Association of Dental Faculties has been given almost unlimited power by the dental profession, and must live up to the high ideals set for it or else forfeit the confidence, respect and support of all practitioners. We are not sufficiently versed in this matter to suggest any course of action, but we certainly feel that there is a great chance for improvement in dental educational affairs, and the profession looks to the Faculties' Association to better present conditions. We think enough rules have been passed, but it is an open secret that several of the laws set forth by the N. A. D. F. have not been lived up to by many of the schools belonging to that organization. College men do not

hesitate to state that such is the fact, and in this remissness we believe most of the evil lies.

For several years we have been urging that the greatest improvement in dental education would come when the Faculties' and Examiners' Associations could consent to bury petty jealousies and pride and work together. This year the two organizations meet at the same time and place, and if the predicted harmony materializes we shall hope to see these two ruling bodies at last acting in concert. At present the question of what the qualifications shall be is wholly in the hands of the Faculties' Association. Perhaps it should remain there, but we feel that the state boards and National Association of Dental Examiners can render great service to the profession and to the Faculties' Association by aiding that latter organization in enforcing the regulations laid down by it.

Just now the state examining boards are with few exceptions doing their work in a most careless and slipshod manner, and are not nearly covering their possible field of usefulness. If, however, the Faculties and Examiners could once come to an agreement, each would greatly help the other and both would be in better repute among the profession. The unification of state laws can be brought about by these two organizations more readily than by the whole dental profession combined. Furthermore, if the Faculties' Association lived up to its rules and regulations, and the examining boards knew this, there would in all probability be no need for graduates to pass examinations, as their diplomas would entitle them to a license. There is a great and honorable future for both the Faculties' and Examiners' Associations, if they will only live up to their opportunities and the best there is in them.

DENTAL PROTECTIVE ASSOCIATION.

Some things which have transpired within the last few weeks will undoubtedly be of interest to our readers. Up to date the Crown Co. have commenced about fifty suits, all east of Ohio, but they openly state that they expect to shortly bring 1,000 additional ones. As our readers have already been informed, they attempted to force settlement of some of these cases by placing U. S. marshals or receivers in the dentists' offices. The Association furnished a bond and checkmated this move, as the marshals were immediately removed. We then took the matter into court, where the Federal

judge in Boston pronounced the Crown Co.'s action illegal, and we now have that organization under bonds for damages.

Their next move was to secure an order from the court in New York, compelling one of the members sued to bring his books and have an examination of them before a master. This action the Association's attorney opposed, on the ground that the Supreme Court of the United States had decided against any such procedure. But Judge Lacombe, before whom the motion was argued, overruled Mr. Offield's objection and allowed the examination of the books to be carried out. The Crown Co.'s attorney is now attempting to make much capital out of this ruling. He omits, however, to explain that the following week when the Crown Co. attempted to carry out the same course in Boston, the Court of Appeals—the highest court in that Federal district, refused their order and pronounced such procedure illegal. Our attorneys are confident that should the Crown Co. ever secure a judgment on Judge Lacombe's ruling, we could have the entire proceeding reversed in the Supreme Court, and then overthrow them.

The Crown Co.'s attorney is now sending the following letter to several of the dentists who have been sued:

[Copy.]

DEAR SIR:—The court has granted an order directing your examination before trial in the above case. The plaintiff's right to do this and examine a defendant's books has been established recently in its case against the Hanks Dental Association, Judge Lacombe overruling all the objections interposed by Mr. Charles K. Offield, the counsel for the Dental Protective Association. The examination of Dr. Hanks required five sessions before the master appointed for the purpose. He was obliged to produce all the books of the corporation and was examined at great length as to his patients and the operations involving bridge work performed upon them. The cost of the examination in master's and stenographer's fees alone aggregated nearly $200, which item will be charged against the defendants as a part of the costs on the plaintiff's entering judgment on the merits in this case.

It is the wish of the plaintiff to recover its legal rights against you at the least trouble and expense to yourself. It therefore directs me to extend to you the opportunity of voluntarily filing a verified account with me showing each and every operation involving bridge work by you performed between the dates of April 12, 1894, and March 15, 1898, and the respective amounts received by you for such work. If this account is presented by you at this office in person or by attorney, duly verified, within ten days from the date of this letter, and proves satisfactory, there will be no occasion for putting you to the annoyance and expense of an examination.

Should you require any further particnlars as to the requirements of the account, I should be glad to afford them to you or your attorney at this office. Failing to hear from you by the date specified, measures will be taken to insure your attendance for the purpose of a thorough examination before Arthur H. Masten, Esq., the special master appointed by the court in this case. Yours, etc., W. D. EDMONDS.

It is very evident that the sole object in so doing is to try and force dentists to settle by annoying them with such communications and threats. In all cases we advise members of the Association to make no settlement and to render no accounting, as we are entirely confident that we shall eventually overthrow all the Crown Co.'s claims in court.

Their last move has been to bring suits on the Richmond bridge patent, which was taken out more recently than the Low. This patent was declared by the New York courts to be invalid and an infringement of the Low. The game just now is to secure a reversal of this decision, and after exhausting the claims under the Low bridge patent, to make the profession pay royalty on the Richmond. We are prepared to meet this new issue, and as before stated, we have no fear but that we shall finally defeat absolutely every claim of the International Tooth Crown Co., but it will undoubtedly be a long, hard fight, and we would again urge upon the membership that they stand together and present a united front against their enemies and those of the profession.

Notices.

KENTUCKY STATE DENTAL ASSOCIATION.

At the annual meeting of this society, May 29-31, 1900, the following officers were elected: Pres., J. M. Jewett; V. P., W. W. Barnes; Treas., F. R. Wilder; Sec., F. I. Gardner.

COLORADO STATE DENTAL ASSOCIATION.

At the annual meeting of this society, June 12-14, 1900, the following officers were elected for the ensuing year: Pres., E. R. Warner; V. P., J. A. Smith; Sec., H. F. Hoffman; Treas., Wm. Smedley.

NORTHERN OHIO DENTAL ASSOCIATION.

At the forty-first annual meeting of this organization, June 4-6, 1900, the following officers were elected: Pres., F. W. Knowlton; V. P., J. F. Stephan; Cor. Sec., W. T. Jackman; Rec. Sec., W. A. Siddall; Treas., B. A. Allen. Eleven dentists were elected to membership.

WASHINGTON STATE DENTAL ASSOCIATION.

At the annual meeting of this society, May 19, 1900, the following officers were elected: Pres., C. L. Erwin; First V. P., A. B. Bailey; Second V. P., W. E. Burkhart; Sec., E. J. Fisher; Treas., W. A. Wright. The next meeting will be held in Seattle, 1901.

CALIFORNIA STATE DENTAL ASSOCIATION.

At the annual meeting of this organization, June 19-21, 1900, the following officers were elected for the ensuing year: Pres., A. F. Merriman, Jr ; First V. P., A. M. Barker; Second V. P., F. L. Platt; Third V. P., L. Van Orden; Rec. Sec., W. Z. King; Cor. Sec., W. J. Taylor.

GEORGIA STATE DENTAL SOCIETY.

At the thirty-second annual convention of this body, June 12-14, 1900, the following officers were elected: Pres. W. H. Weaver; First V. P., H. H. Johnson; Second V. P., A. M. Jackson; Rec. Sec., S H. McKey; Cor. Sec., O. H. McDonald; Treas., H. A. Lawrence; Editor, T. P. Hinman.

MAINE STATE DENTAL SOCIETY.

The thirty-fifth annual meeting of this body will be held in Brunswick, July 17-18, 1900. All dentists are invited to attend these meetings. The executive committee have arranged an interesting program and hope for a large attendance.

H. A. KELLEY, Sec., Portland.

MARYLAND STATE DENTAL SOCIETY.

At the annual meeting of this organization, June 8, 1900, the following officers were elected for the ensuing year: Pres., G. M. Smith; V. Ps., J. G. Grieves, H. A. Wilson; Rec. Sec., J. K. Burgess; Cor. Sec., L. W. Davis; Treas., A. C. Pennington; Ex. Com., B. Holly Smith, C. M. Gingrich, C. C. Haines.

MASSACHUSETTS STATE DENTAL SOCIETY.

At the thirty-sixth annual meeting of this body, June 5-7, 1900, the following officers were elected for the ensuing year: Pres., John F. Dowsley; First V. P., F. S. Faxon; Second V. P., A. J. Flanagan; Sec., E. O. Kinsman; Treas., J. T. Paul; Editor, W. E. Boardman; Librarian T. W. Clements.

WISCONSIN STATE BOARD OF DENTAL EXAMINERS.

The next meeting of this organization for examination will be held at LaCrosse, July 17, 1900, at 9 a. m. The examinations will be conducted in English, in writing. A practical demonstration is also required, and applicants must furnish their own instruments and patients.

W. H. CARSON, Sec., Goldsmith Bldg., Milwaukee.

MICHIGAN STATE DENTAL ASSOCIATION.

At the annual convention of this society, June 11-13, 1900, the following officers were elected for the ensuing year: Pres., S. M. Fowler; First V. P.,

C. H. Oakman; Second V. P., E. A. Honey; Treas, Geo. H. Mosher; Sec., C. C. Noble. There will be no meeting next year, the Tri-State Convention taking its place. The students of only five dental colleges are allowed registration without examination in Michigan.

INDIANA STATE DENTAL ASSOCIATION.

At the annual meeting of this society, June 19-21, 1900, the following officers were elected: Pres., Geo. E. Hunt; V. P., C. E. Pittman; Sec., F. R. Henshaw; Treas., W. W. Munger.

All dentists in attendance at the meeting who had been in the practice of dentistry from twenty-five to forty years organized an association to be known as "The Patriarchs of Dentistry."

RESOLUTIONS BY CHICAGO DENTAL SOCIETY ON DR. MENGES' DEATH.

For, as much as the Almighty God has taken to his home the spirit of our beloved associate, Theodore Menges, who for many years was not only an honorable member of the Chicago Dental Society but a valuable and sincere supporter of dental educational work, giving freely of his time, mind and substance in his noble purpose; the advancement of a higher dental educational standard in America, and in this we shall greatly miss his strong and charming personality and upright character; be it

Resolved, That in his death this society and the profession of dentistry are caused to suffer a severe loss, and we, the members thereof, hereby extend to the bereaved widow our sincere sympathy.

Resolved, That these resolutions be entered on the minutes of this society and that an engraved copy of the same be transmitted to the bereaved Mrs. Theodore Menges as a mark of our respect.

FRANK N. BROWN,
A. H. PECK,
H ALFRED GUNTHER.

June 5, 1900. *Committee.*

RESOLUTIONS ON DR. MENGES' DEATH BY HIS STUDENTS.

WHEREAS, God in his infinite wisdom has removed from our midst, and from the work in which he was becoming so great a force, our friend and teacher, Dr. Theodore Menges; and

WHEREAS, We, the students of Northwestern University Dental School, realize the great loss that is sustained thereby; be it

Resolved, That we bow in humble submission to the will of Almighty God, and hereby express our heartfelt sympathy to the bereaved wife and sorrowing friends, and to the faculty of Northwestern University Dental School, of which he was a valued and honored member; and be it

Resolved, That each one having lost a personal friend, we express our appreciation of his untiring efforts and devotion to the upbuilding of the dental profession at large, to the Northwestern University Dental School, and to he individual intesests of its students; and be it further

Resolved, That a copy of these resolutions be presented to Mrs. Alice Menges, to the faculty of said institution, and that copies be sent to the leading dental journals for publication.

ELMORE T. HULL,
WM. A. KAAKE,
L. J. SCHNEIDER,
EUGENE MAGINNIS,
Committee.

CHICAGO, June 2, 1900.

RESOLUTIONS ON DEATH OF DR. N. W. HAWES BY BOSTON SOCIETY FOR DENTAL IMPROVEMENT.

Dr. Nathaniel Ware Hawes, one of the earliest active members of this society, died at Wrentham, Mass., April 1, 1900. He was an honored member of this society, and had practiced in Boston since 1865. He was born in Wrentham Aug. 12, 1838, was educated at Day's Academy in that place, and studied his profession with Dr. Geo. E Hawes of New York. He graduated from the Harvard Dental School, and for a time practiced in Wrentham and Foxboro. He was a demonstrator in operative dentistry, and was afterward appointed assistant professor in the same chair in the school from which he graduated. Dr. Hawes contributed valuable papers to the literature of his profession, and was prominent in Masonic circles as well as in public affairs in his native town. He was a man of great generosity and unlimited geniality of disposition. His unbounded hospitality was best known to us by the delightful outings that we had with him in his beautiful home. We shall miss his familiar face and the hearty grasp of his hand.

WHEREAS, It has pleased our Heavenly Father to take from us our honored member, Dr. Hawes, therefore be it

Resolved, That we, the Boston Society for Dental Improvement, desire to place upon record our high appreciation of his professional standing; that we mourn his death as a personal as well as a professional loss, and desire to testify to our admiration of his efforts given at all times for the advancement of his profession.

Resolved, That a copy of these resolutions be sent to his family, that they be spread upon the minutes of our society, and that a copy be sent to the professional journals.

R. R. ANDREWS,
F. M. ROBINSON,
} Committee.

H. S, DRAPER, Sec.
Boston, May 15, 1900.

RESOLUTIONS BY CHICAGO DENTAL SOCIETY ON DEATH OF DR CUSHING.

It has come to the notice of this society that our beloved friend and fellow-practitioner, Geo. H. Cushing, one of the founders of this organization, departed this life May 25, 1900, at Los Angeles, Cal.; therefore, be it

Resolved, That we mourn his loss as personal, because every member of the society knew him and loved him as a friend, counselor and guide. This is no ordinary expression from a committee appointed to draw a memorial, but one where every member feels that it is a personal loss to no longer see and feel the presence of one much loved; be it further

Resolved, That in Dr. Cushing's death we mourn the loss of one who was in every sense an inspiration to do one's best in all the complex phases of life's duties. He was monitor, teacher and helper in all emergencies. His life was devoted to his profession in a sense little understood by the thoughtless, and his influence for good was far reaching and always to be relied upon. We feel in this feeble tribute to the vast labors he propounded for forty years that we fall short in our estimation of them, because no one was more stanch in his devotion to private or public duties than our departed friend. He had his faults, but they were so obscured by his noble and gentle nature that few knew of them, so that they must lie in an oblivion so profound that only his most bitter enemies may recall them. For us, he was a pattern of the kindly, professional gentleman and devoted friend. We extend to his family our condolence and this expression of our sorrow, and we will all go to his last resting place feeling that life is but a brief day, and shall soon meet him again in the near future, where all is peace and serenity.

Resolved, That a copy of this tribute be sent to the family of the deceased and to the dental journals for publication.

A. W. HARLAN,
TRUMAN W. BROPHY,
JOSEPH W. WASSALL,
Committee.

MISSOURI STATE DENTAL ASSOCIATION.

The thirty-sixth annual meeting of this association will be held at Louisiana, Mo., July 10–13, 1900. A cordial invitation is extended to all reputable dentists to be present and participate in the proceedings and become members of the association. All railroads in the state have granted a one and one-third fare on the certificate plan. The Palmer House rates are $1.50 and $2 per day.

Essays and discussions: 1. Hon. Champ Clark, "Address of Welcome." 2. W. L. Reed, "President's Address." Discussion opened by F. M. Fulkerson, F. A. Achelpohl. 3. W. H. DeFord, Cedar Rapids, Iowa, "Necrosis Involving the Alveolar Process, Superior Maxillary, Nasal and Palate Bones, Resulting from Maltreatment of the Alveolar Abscess." Discussion opened by J. E. Cravens, Indianapolis, A. M. Tuft. 4. J. B. Chaffee, "Things I Have Noticed and Other Things." Discussion opened by W. M. Carter, J. B. McBride 5. Ira B. Crissman, Chicago, "Relation of Dental Colleges to the Profession and General Public." Discussion opened by D. R. Stubblefield; Nashville, E. N. LaVeine. 6. Harry M. Hill, "The Material Porcelain." Discussion opened by C. H. Darby, D. O. M. LeCron. 7. H. E. Horn, De Soto, "Finished Dentistry." Discussion opened by Geo. A. Bowman, Geo. H. Belding, Calmar, Iowa. 8. M. D. Haunsfar, "Bacteriology and Pathology, their Relation." Discussion opened by W. H. DeFord, H. Prinz. 9. John G. Harper, "Incidents in Practice." Discussion opened by T. W. Pritchett, Whitehall, Ill.; R. J. Winn. 10. H. H. Sullivan, "Openfaced Gold Crowns." Discussion opened by W. N. Conrad, E. G. Simmons. 11.

R. C. Brophy, Chicago, "The Universal Tooth." Discussion opened by W. E. Tucker, W. F. Lawrenz. 12. Chas. L. Van Fossen, subject to be announced. Discussion opened by Ira B. Crissman, Chicago; W. W. Cleveland. 13. C. D. Lukens, "Lantern Lecture on Orthodontia." Discussion opened by J. E. Hinkins, Chicago; Geo. A. McMillen, Alton, Ill. 14. D. J. McMillen, Kansas City, "Preparation of Cavities and Fillings with Noncohesive and Cohesive Gold Foil," with illustrations. Discussion opened by B. Q. Stevens, M. R. Windhorst. 15. J. T. Fry, subject to be announced. Discussion opened by N. H. Gaines, P. H. Eisloeffel. 16. D. F. Orr, Liberty, "Questions on Methods and Practice." Discussion opened by E. E. Shetluck, W. W. Birkhead.

CLINICS—SECOND DAY.

1. J. E. Cravens, Alveolar Periostitis. 2. J. E. Hinkins, Contour moss fiber gold filling. 3. D. R. Stubblefield, Operative and prosthetic technics. 4. R. C. Brophy, Table clinic, Dentenax slotted teeth. 5. M. R. Windhorst, Filling with new process gold foil. Demonstrating mechanical mallet. 6. T. W. Pritchett, Contour amalgam fillings in molars and bicuspids. 7. F. F. Fletcher, Table clinic—post anchorage for pulpless teeth, in bridge work. 8. J. W. Hull, Immediate pulp extirpation without cataphoresis. 9. Geo. H. Belding, Gold filling, using hand mallet. 10. W. W. Cleveland, Swaged metal plate from plaster model. 11. Clinton B. Helm, Gold filling, using Bonwill mallet. 12. D. O. M. LeCron, Table clinic—porcelain inlay, crown and bridge work. 13. D. J. McMillen, Combination cohesive and noncohesive gold filling. 14. W. W. Birkhead, Pyorrhea. 15. H. H. Sullivan, Open face gold crowns. 16. W. L. Bridgeford, Contour gold filling. 17. John G. Harper, Method of swaging backing for porcelain-faced crowns. 18. E. W. Stevens, Corners and fillings from gold plate for incisors and cuspids. 19. J. L. Clark, Bridge for tilting molars.

CLINICS—THIRD DAY.

20. Ira B. Crissman, De Trey's crystal gold filling in labial cavity. 21. W. F. A. Schultz, Operation for necrosis resulting from abscessed antrum. 22. Geo. A. McMillen, Table clinic—practical crown work. 23. J. S. Letord, Demonstrating working qualities of Eoff's gold for filling. 24. N. H. Gaines, Treatment of exposed pulp and filling with cement. 25. Chas. L. Van Fossen, Removable facings for crown and bridge work. 26. H. Prinz, Application and manipulation of mummifying paste. 27. R. J. Winn, Contour gold fillings, No. 4 foil, heavy mallet. 28. W. W. Flora, Swage metal plate over plaster cast. 29. J. C. Pasquetb, Gold filling, gingival cavity, labial surface. 30. W. F. Lawrenz, Table clinic—the Goslee system of porcelain crown and bridge work. 31. S. C. A. Rubey, Noncohesive and cohesive gold foil in approximal cavity. 32. C. D. Lukens, Orthodontia. 33. E. G. Simmons, Method of making open-faced gold crown. 34 M. R Windhorst, A rapid system of bookkeeping—modification of card system. 35. A. G. Johnson, Cleavage of enamel preparatory to crowning, using instruments of clinician's own design. 36. C. H. Williams, Table clinic—rapid method, making perfect fitting open face gold crown for bridge work. 37. D. J. McMillen, Extracting roots with elevator.

B. L. THORPE, *Cor. Sec.*, St. Louis.

News Summary.

ISAAC N. WELCH, a dentist at Eaton, O., died June 17, 1900.

NEIL DOWNEY, 57 years old, a dentist of Minneapolis, died June 6, 1900.

J. E. HEWLETT, a dentist of St. Joe, Mo., died of heart failure May 28, 1900.

WM. H. FRYE, 44 years old, a dentist at Keyser, W. Va , died June 17, 1900.

F. H. KENNEDY, 23 years old, a dentist of Springfield, Mass., died May 28, 1900.

J. B. BRITAIN, sixty-one years of age, a dentist of Wilkesbarre, Pa., died June 15, 1900.

J. P. LOWE, a dentist of Belleville, O., received fatal injuries in a runaway June 6, 1900.

JAS. L. NEWMAN, SR., who had practiced dentistry in Chicago since 1868, died June 14, 1900.

G. R. CHAMBERS, 60 years old, a dentist of Vineland, N. J., died of apoplexy June 4, 1900.

VETERINARY DENTISTRY.—A school for the teaching of this practice has been organized in Oregon.

LAWRENCE FINIGAN, 53 years old, a dentist at San Jose, Cal., died June 20, 1900, from heart disease.

Z. C. KELLEY was fined $50 in Lynn, Mass., June 7 for practicing dentistry without a certificate.

J. J. GILLANE, a dentist of Chicago, was shot and perhaps mortally wounded by footpads June 5, 1900.

UNIVERSITY OF MINNESOTA, COLLEGE OF DENTISTRY, held its twelfth annual commencement exercises June 7, 1900, and graduated thirty-six students.

UNIVERSITY OF SOUTHERN CALIFORNIA, COLLEGE OF DENTISTRY, held its commencement exercises June 13, 1900, at Los Angeles, Cal., and graduated eleven students.

REVERSE THE DAM.—When the dentist finally took the rubber dam out of the patient's mouth the latter remarked that hereafter the name of the article should be reversed.

WESTERN RESERVE UNIVERSITY, DENTAL DEPARTMENT, held its annual commencement exercises June 14, 1900, at Cleveland, and conferred degrees upon thirty-two graduates.

DANGERS FROM MALPRACTICE.—A dentist in Minneapolis has been sued for $3070. by a patient who claims that his jawbone was permanently injured through extraction of a tooth.

PAINFUL EXTRACTION (for the dentist).—A Chicago dentist extracted a tooth for a man and it caused him so much pain that he jumped from the chair and threw the dentist down stairs.

J. H. KIDDER, 75 years old, and for fifty years a practicing dentist in Lawrence, Mass., died June 6, 1900.

H. L. MUNDY, 40 years old, a dentist of Kansas City, Mo., committed suicide June 1, 1900. He had been partially insane for several years.

FORMALDEHYD IN MILK.—The Chicago health commissioner is after milk men who use formaldehyd as a preservative, because he claims that its use will greatly increase infantile mortality.

LOUISIANA DENTAL BILL FAVORED.—This measure, which has just passed the Louisiana House of Representatives and is now before the Senate, is favored by almost every dentist in the state.

SOUND TEETH INSURE WORK.—A match factory at Crawfordsville, Ind., will start its plant in a week or two, and is now examining women for positions. Only those who have perfect teeth will be employed.

EXPENSIVE TEETH.—Miss Lena C. Bourbeau was fined $50 June 2 in Brockton, Mass., for practicing dentistry without being registered. A set of teeth which she made will now cost her more than they did the patient.

DELTA SIGMA DELTA FRATERNITY MEET.—Detroit members of this organization, and about thirty from outside cities, were entertained May 19 by the Detroit chapter. Fifty plates were set for the annual banquet in the evening.

ROCHESTER DENTAL SOCIETY at its regular monthly meeting, June 19, 1900, elected the following officers for the ensuing year; Pres., W. W. Belcher; V. P., W. W. Smith; Sec. and Treas., F. W. Proseus; Librarian, Dr. Goode.

J. H. KENNERLY, who has for some time been connected with the Marion-Sims College of Dentistry, has resigned and been elected to the Chair of Prosthetic Dentistry and Secretary of the Faculty of Washington University Dental Department.

DENTIST A QUICK SHOT.—Edward Sellers, a dentist at Brookwood, Ala., killed a miner at that place June 23. There was a dispute over the dentist's bill, and the miner drew a gun, but the dentist shot twice before the other man could raise his revolver.

SPECIAL TRAIN TO OLD POINT COMFORT leaves Central Station, 12th street and Park row, Chicago, Sunday, July 8, at 9 a. m., on the Big Four—Chesapeake and Ohio Railroads. Secure your berth if you have not already done so. Fare for round trip, $26.67.

TOOTHACHE REMEDY IN 1800.—A very efficacious practice at that date was to crush a lady-bug between the thumb and forefinger and then to rub the finger on the gum and tooth. Freshly crushed bugs were recommended.—*S. H. Corney, Jr., in Med. Age.*

PAINLESS SHIRT WAISTS.—On one end of a building in Boston is the sign "Ladies' Shirt Waists," and on the other end "Dental Parlors." Between the two, but much nearer the "shirt waists" than the "parlors," we read "All Work Absolutely Painless."

BOARDING PLACE FOR VEGETARIANS.—You don't make a graveyard out of your stomach if you are a scholar and a gentleman; the choicest vegetarian fare scientifically prepared, $4.50 to $5 per week, at Mrs. ——, —— Ave.—*Advertisement in Chicago paper.*

ODONTOLOGICAL SOCIETY OF NATIONAL UNIVERSITY, WASHINGTON, D. C., at its annual meeting June 13, 1900, elected the following officers: Pres., C. W. Scott; V. P., L. F. Davis; Sec., W. D. Monroe; Treas., W. W. Trail; Librarian, A. P. Bain; Essayist, E. E. Rankin.

ANTI-NOISE CRUSADE IN CHICAGO.—A vigorous war is being waged against unnecessary noises by Chicago citizens, headed by Dr. S. M. Jones. Chicago is not only the dirtiest, but also the noisest city in the United States to-day, and we trust the efforts of these gentlemen will bear fruit.

NEWSPAPER ADVERTISING.—The San Francisco *Examiner* of April 29 contains an article by A. C. Hart, "P.H.B., M.D., D.D.S., Prof. of Chemistry, Dental Lecturer, etc," on the teeth and their care. Accompanying the article is a photograph of a dentist's office, and the man operating at the chair is presumably the author of the newspaper essay.

WOMEN DEADBEATS OUTNUMBER THE MEN.—Members of the Janesville, Wis., Dental Society are making out a list of local residents who are willing to have dental work done but who do not care to pay for it. These will be placed on a special deadbeat list, and same furnished to every member of the society. It appears that on the list the women are in the majority.

AMATEUR DENTIST IN TROUBLE.—A Chicago dental student was arrested for disorderly conduct, and while he was waiting for trial in the police court the city prosecutor complained of toothache. The student thought that if he could relieve the sufferer the fine would be remitted, so he attempted to pull the tooth but succeeded in taking out only half of it. The prosecutor saw that the student was fined, and then rushed out in search of a more competent dentist.

DENTISTS SKIN FARMERS.—Several agriculturists in Iowa and Nebraska have been living on soup and gruel since last January. At that time the "Omaha Dental Company" reached Magnolia, Iowa, and offered to extract all old teeth and put in a full set for $5. Many farmers paid $5 and allowed the operators to pull all their teeth. Measurements were carefully taken of each mouth, and the "company" promised to return and deliver the teeth on the 15th of April, but they have not made good as yet.

DIPLOMA MILL RAIDED.—Federal authority interposed June 15 to stop what is asserted to be one of the most flagrant of Chicago's diploma mills. The officers of the Metropolitan Medical College were arrested on the charge of using the mails to defraud. They are: Jas. Armstrong, President; J. H. Randall, Vice-President; Thos. Armstrong, Secretary; C. M Hovey, Attorney. The Chicago postoffice has received word from Washington to withhold all mail addressed to any of the four defendants or to the institution with which they are connected. The defendants have been released on bail, but are held to the federal grand jury.

AWE INSPIRING.—Biggs: There goes a man who is approached with fear and trembling by all who have dealings with him.

Boggs: Ah, a criminal judge, I presume?

Biggs: No, a dentist.

INGRATITUDE.—A woman at Council Bluffs, Iowa, recently attempted to commit suicide by swallowing poison. She was saved by the kindly assistance of a neighboring druggist. She now threatens to bring suit against the druggist on the grounds that his druggist's license does not permit him to practice medicine.—*West. Med. Rev.*

THE LUNGS.—By Tommy: "When we breth the longs moves around to all parts of the bodie the longs is too little round holes in the hed we breth threw them we hat better take care of the longs. If they was to decay on us we would not be so very helthy persons without no longs is apt to be peevish and missable in a sickly condition."—*Puck.*

HYPERTROPHIED GUM.—When hypertrophied gum presents between teeth and overlapping edge of cavity to be filled, ethylate of sodium, applied with a pellet of cotton, will destroy the tissue, melting it into a gelatinous mass. It comes in the form of powder, which dissolved in alcohol forms a red, syrupy liquid, exceedingly corrosive.—*S. George Elliott, Dental Review.*

TERRIBLE WARNING.—There was a man who was too stingy to subscribe for his home paper, so sent his little son to a neighbor to borrow one. As the boy was going home he fell down and broke his leg. The father heard his cries and ran out to see what was the matter, but slipped and fell, dislocating his knee and tearing the bosom out of his ten-dollar pantaloons. His wife ran to his assistance, leaving a two-year-old baby on the floor. The baby crawled out and fell down the well, and while the mother was fishing the baby out the house caught fire and was totally destroyed. Moral: Now is the time to subscribe.—*Cambridge (Ohio) Sun.*

LIPS AS INDICATIVE OF CHARACTER.—According to *Gaillard's Med. Jour.* Dr. A. Bloch, the French anthropologist, attacks the theory that thick lips mark sensuality, while thin and delicate lips denote spirituality, firmness and elevated character. In a recent paper the scientist states that the shape, size and color of the lips are purely race characteristics, and that in the hybrid peoples of Europe and America, where there has been such a general intermingling of races, a child may well inherit from not very remote ancestors lip forms that completely belie the actual character of the child, as indicated by the lip theory. Dr. Bloch's investigations satisfy him that really thick lips in the white races are always anomalies or freaks of nature.

PRENATAL DAMAGES.—The Supreme Court of Illinois has recently handed down a decision in a peculiar case. It was that of an infant who claimed damages for a deformity alleged to have resulted from injury to the mother before its birth. The mother, while pregnant, was injured in an elevator accident at St. Luke's Hospital, Chicago, her left leg being caught and crushed. When the child was born his left leg was deformed. The hospital authorities settled with the woman for her injuries, and then she brought

suit in the child's name for $50,000 damages for the deformity, which it was claimed was due to the same accident. The court dismissed the suit on the ground that at the time of the accident the child could not be credited as a separate being, capable of sustaining an action independent of the mother.

HICCOUGH.—J. Noir has had several successes in treating persistent hiccough by Laborde's plan. In one, a very nervous girl of 6½, who had had violent hiccough for six hours and was so much exhausted that her relatives had given her up for dead, traction on the tongue for about a minute and a half calmed the malady as by magic, and it did not recur. In another case, where the patient was diabetic, tuberculous and cachectic, the hiccough had been severe for several days and was evidently toxic in origin. It had resisted all forms of medicinal treatment and absolutely prevented sleep. Traction on the tongue, continued for about two minutes, completely arrested the spasm; it, however, reappeared several days later, but again ceased on the patient practicing the method on himself. The great advantage is its simplicity, and that it does not require any electrical or other apparatus —*Brit. Med. Jour.*

AUSTRALIA BOTHERED BY BOGUS COLLEGES.—A number of chemists and dentists in Sydney have recently received a typewritten circular emanating from the "Special Australian representative" of an American institution which is prepared to distribute dental degrees freely. The following is a copy of the circular: "Dear Sir.—I have pleasure in informing you that I have been instructed by the faculty of one of the leading medical and dental colleges in the United States, who desire to extend their sphere of usefulness throughout Australia, to intimate to leading dentists in these colonies that they are prepared to enroll them 'ad eundem gradem' in their college as doctors of dental surgery. Should you care to join their roll, kindly notify or call upon me as soon as possible, and oblige, yours faithfully, ———Special Australian Representative."

Dr. A. Burne of Sydney is a member of the International Committee on Colleges, etc., and is doing his best to check the machinations of these disreputable diploma mills in his country.

REMOVAL OF HALF OF THE TONGUE WITH REMOVAL OF THE TONSIL.—Dr. Curtis presented a man of sixty years who had been admitted to hospital on Dec. 15, 1899. At that time he had been suffering great pain; the saliva had been dribbling from the mouth, and there had been a deep ulcer at the tonsil extending over to root of tongue. However, the mouth could be freely opened, showing that there was no involvment of the pterygo-maxillary parts. The operation had been done on Dec. 7, beginning with the Mikulicz method. The vertical incision had also been made over the carotid. After separating the periosteum the ramus had been divided, and twisted out of its socket without any division of the soft parts above. This operation had always given him free access to the tonsil and perfect control of hemorrhage. With the finger in the mouth hemorrhage could be stopped entirely, or the bleeding point could be turned out and secured. This method of operating, particularly in elderly people, was far better than by dividing the jaw. The growth

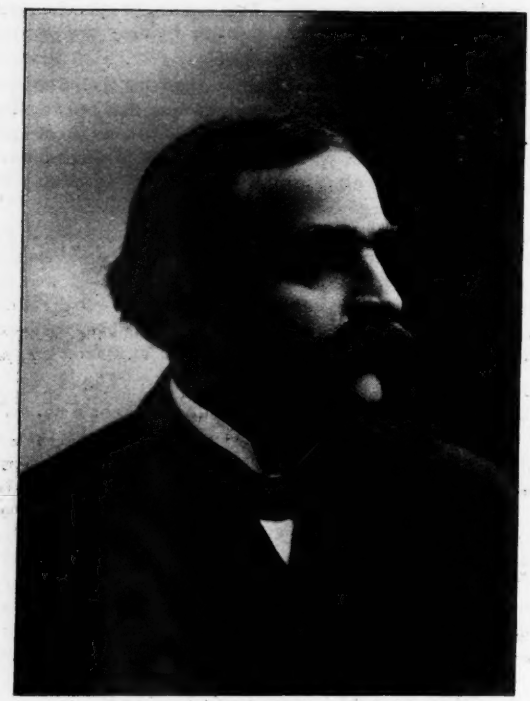
had been cut away, including the entire tonsil and wall of the pharynx. The tongue had been found extensively involved, and hence it had been removed by the method of splitting and dividing it at the root. The man had made a rather slow recovery, but the result was good. This method of operating seemed to him far better than the splitting of the cheek or dividing the jaw vertically as was done so often.—*Med. Rec., April, 1900.*

CAN BRUSHES BE STERILIZED?—A. Winternitz: Tests with a large number of brushes showed that boiling them for ten minutes in a 1 per cent solution of soda, and keeping them afterward in a 1 per 1000 solution of sublimate, sterilized them in respect to the pathogenic germs usually encountered, with complete success and without injury to the brush. Unusually resistant spores were not destroyed.—*Jour. A. M A.*

PRESERVATION OF RUBBER ARTICLES.—Professor Krolikowski publishes in a Polish paper the results of extensive tests which show that the best method of keeping rubber articles is in a one per cent solution of formol or zinc chlorid or a concentrated solution of boric acid. Red rubber keeps better than black, other conditions being equal. Rubber articles should never be left exposed to the air or to the action of cold.—*Jour. A. M. A.*

CONSTRUCTION OF CONTRACT TO CURE PHYSICIAN.—A physician who had been suffering from a sore on his face which he himself could not cure, called on another doctor, of whom he had heard as a specialist in several diseases, for the purpose of being treated. The specialist termed the affection lupus or lupus cancer. But whether it was or not is here immaterial. Taking the specialist's version of the contract entered into between them, it was that, in the event of a cure, the other should give him either a certificate of his skill and proficiency as a specialist in the treatment of the trouble from which his patient had suffered or $5,000 in cash. A cure was effected, and the specialist had recourse to the law to enforce his demands. A trial resulted in a judgment for the defendant, the judge holding that the $5,000 which the specialist testified was to be paid if the certificate was not given was a penalty, and therefore not recoverable. But, in so doing, the Supreme Court of Pennsylvania says that the court below must have lost sight of the controlling facts. The Supreme Court says that the defendant was himself a physician, seeking cure for his ailment at the hands of another. He was not the ordinary patient calling on a specialist, but a member himself of the medical profession, knowing, according to his own testimony, what his trouble was, and presumed to know what would be a proper charge for the services to be rendered—what he himself might ask. And no matter what its judgment might be under different conditions, the Supreme Court declares it cannot approve the view that the $5,000 was a penalty. So it holds that if the specialist is to be believed, it was an alternative mode of payment agreed on by the parties, capable of intelligently entering into a contract. In consequence of which it reverses the judgment above mentioned, suggesting that the case, Burgoon vs. Johnson, ought to be remitted for another trial, that the court may instruct the jury that, if specialist's testimony is to be believed, the defendant must pay the sum agreed on for the relief sought and found.—*Jour. A. M. A.*

Obituary.



THEODORE MENGES, B.S., A.M., D.D.S.

Dr. Theodore Menges died in Chicago June 1, 1900, of appendicitis, after an illness of less than a week. His remains were cremated at Graceland and the ashes sent to Bristol, Ind., for burial. He leaves no family except his wife, who has been constantly with him in his school work and who has afforded him great assistance.

Dr. Menges was born May 2, 1854, on a farm near Bristol, Ind., and spent his boyhood there, finishing the common school course at an early age. He was ambitious and studious, and at sixteen he taught school in the home district, continuing for five years. During this time his summers were spent at the Northern Indiana Normal School, where he earned the degree of B.S. and subsequently that of A.M. When these first five years were over he took charge of a larger school at Bloomfield, Ind., and shortly afterward organized a successful normal school at the same place, all of which occupied

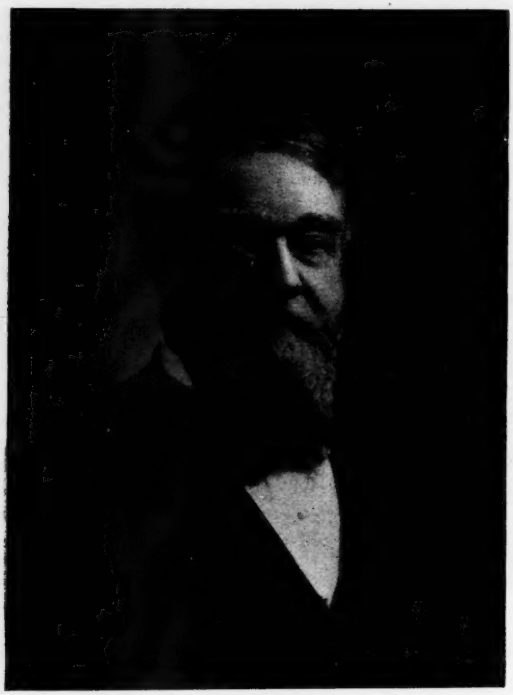
his time for seven years. In 1879 he was married to Miss Alice Brown, one of the teachers in his school. During the latter part of this school work he studied law, and when he gave up teaching was admitted to the bar, and started practice at Bloomfield. About this time, or in 1881, he took the first year's course in the Jefferson Medical College at Louisville, Ky., but returned at once to the law. He practiced same, however, but two years at Bloomfield, then going west to Kimball, Neb., and later to Cheyenne, Wyo., where he continued the practice of law and took up also real estate and mining speculations, for which he developed a taste and much skill. He was soon in possession of a comfortable fortune, but when the collapse of the boom in western lands and mining property came it looked as if he were ruined. He saved something from the wreck, however, and came to Chicago in 1891. Then both he and Mrs. Menges entered the American College of Dental Surgery, and both received the degree of D.D.S. His early training had given Dr. Menges a taste for school work, so that he took up eagerly dental college affairs, and after his graduation became secretary of the school. With characteristic energy he put new blood and life into the college, and from the time of his connection its classes grew larger, the instruction was greatly improved, and the school put in the first rank of dental educational institutions. In 1896 the American College was consolidated with the Northwestern University Dental School, and Dr. Menges was continued in the secretaryship. He built up a library, museum and reading room, all of which for a dental school were most creditable, and he greatly improved the whole equipment, teaching force, etc., of the institution.

In his death higher dental education has lost a powerful advocate, since for some time past he was earnestly studying the subject of dental training with the hope that eventually the question might be better understood among both teachers and the profession. His greatest ambition was to effect a radical improvement in dental education in all schools, and if he had lived this would undoubtedly have been accomplished, as he was one who was deterred by no obstacles if he thought his course the right one.

He was an active member of the Chicago Dental Society, Odontographic Dental Society, Chicago Dental Club, Illinois State Dental Society, Dental Protective Association, National School of Dental Technics, National Dental Association, and the National Association of Dental Faculties, in which latter organization he made the greatest impression upon dentistry. For several years he was chairman of the executive committee of the last named organization, and in this work he was tireless, tactful and progressive, always working for higher ideals in dental educational work. The man's power is shown by the fact that within nine years from the time he began the study of dentistry he had become a national figure in its educational affairs.

In private life Dr. Menges was most simple and unostentatious, having a great aversion to formality of any sort. He possessed strong convictions and a wonderful stock of nervous energy, both of which made him a formidable opponent, but withal he had a great deal of liberality and was ever ready to aid anyone in trouble. He was an interesting and forceful speaker, and this trait showed most advantageously when he had laid aside business

cares and worries to enjoy himself with a few friends, who always appreciated his companionship. His executive ability and power as an organizer were not excelled by any member of the profession. He was an earnest student and teacher, a devoted husband and a Christian gentleman, and his death is mourned by a host of friends. Even those who did not agree with all his views could not help but admire the man's earnestness and power.



GEO. H. CUSHING, M.D., D.D.S.

Dr. Geo. H. Cushing died at his home near Los Angeles, Cal., May 25, 1900, after an illness of only three or four days. He attended to his college duties on Monday morning, but went home sick in the afternoon and was very ill until Friday morning, when he seemed to recover, but about 11 o'clock a. m. he was taken with convulsions and died in less than an hour. In accordance with his wishes his remains were cremated and forwarded to Chicago. The interment was in the family lot at Graceland on June 13, and was attended by many of his Chicago friends in the profession. He leaves a

widow, two sons and two daughters. He was married twice, his first wife dying in 1856.

Dr. Cushing was born May 11, 1829, at Providence, R. I., and began the study of dentistry with the late N. A. Fisher, M.D., of that city. Shortly after he began practice in Connecticut and in 1846 at Bristol, R. I. In 1849 he sailed around the Horn and reached San Francisco in 1850. After spending several years in mining, practicing dentistry, etc., he returned to Rhode Island in 1856. In 1857 he came to Chicago, and was associated with Quinlan Bros., dentists. After the retirement of Chas. H. he formed a partnership with John Quinlan. After eleven years' association with these gentlemen he began practice for himself, and continued until about two years ago, when on account of failing health he moved to California, where he entered upon college work in the dental department of the Southern California University.

Up to the time of the Chicago fire in 1871 Dr. Cushing had one of the most lucrative practices in Chicago, but the financial loss resulting from the terrible conflagration so discouraged him that he never fully recovered from the shock. He always took the greatest interest in society work and was elected twice president of the Chicago Dental Society, twice president of the Illinois State Society, president of the Mississippi Valley Dental Association, of which organization he was a charter member; also president of the Chicago Odontological, American Dental Association, Faculties' Association, Examiners' Association, and recording secretary of the American Dental Association. He was also much interested in college work and active therein.

Dr. Cushing was in many respects the most striking personality in the dental profession. He had an especial genius for organization, and many of our most progressive societies owe to him the chief inspiration for their advancement, and even for their existence. He was mainly instrumental in the organization of the Chicago Dental Society and the Illinois State Dental Society, and a notable fact connected with his association with the latter was that he never missed a meeting from the time of its organization till his removal from the state—a period of thirty-three years. This as an unparalleled record of devotion to the welfare of the profession is only typical of the man. His interest in society work never lagged, and he seemed to have an intuition as to what would most certainly further a society's welfare. He was always the chief counselor in any organized body of men with which he was connected. His long tenure of office as secretary of the American Dental Association was a fitting tribute to his worth in this respect, the honor coming to him not only from the love of his associates but because of his peculiar fitness for the office.

His service to the profession in the way of fostering society interests can not be measured by the span of a single life—it must go on as long as dental organizations exist. He helped to give direction and method to society work in the early days when direction and method were so badly needed, and when all was yet an experiment. The impress of his individuality will not soon fade away from the atmosphere of those organizations with which he was

most intimately connected, and the name of Dr. Geo. H. Cushing will be spoken with love and reverence in many a circle during their meetings year after year.

Personally, Dr. Cushing had a most delightful charm. He was in many respects a "gentleman of the old school"—minus the haughtiness which is usually supposed to go with this kind of a personage. He was affable and approachable, particularly to the younger men in the profession, and his wealth of good advice was ever available to those who choose to ask for it. He was filled with a tender compassion over the sorrows of others, and had a heart large enough to embrace the whole of humanity. To those who knew him well he was something more than an ordinary man: he was the embodiment of all that was just and generous and brave and kind. In the summing up of all that makes men great he was one of the greatest that the dental profession has ever claimed.

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